AGU Grammar and Style Guide

1. Hyphenation

The main reason for hyphenation is increased clarity.

1.1. Attributive Adjectives

Always hyphen. The following should always be hyphened as attributive adjectives:

1. Noun + present or past participle

English-speaking people	U-shaped tube
sulfate-containing aerosols	*e*-folding layer
sediment-filled streams	hand-drawn graphs
V-shaped weir	

If the noun in the combination is modified, AGU preference is no hyphen unless you are trying to match a similar combination elsewhere in the paper; then use a hyphen between the modifier and the noun and between the noun and the participle. For example, if "field-aligned" appears in the paper, you should hyphen "magnetic-field-aligned":

magnetic-field-aligned irregularity or magnetic field aligned irregularity

Office style considers some noun + present or past participle combinations in the predicate to be passive verb forms, so they must be hyphened to make it clear that they are performing as a unit:

sediment-filled	Fourier-transformed
Doppler-shifted	band-pass-filtered

2. Adjective + present or past participle (except compass directions)

straight-sided vessel	coarse-textured grain
lunar-orbiting satellite	good-sized sample

Do not hyphen if the adjective is modified by an adverb:

more coarse textured grain
very fine grained

3. Verb + preposition or adverb (unless closed up or opened in dictionary (use the current *Webster's Collegiate Dictionary* and then *Webster's Third International Dictionary* and the Addendum)(see pp. 230-231 in *Words Into Type* 1974 edition (WIT))

hollowed-out
speeding-up

4. "Well," "ill," or "little" + past participle

well-known theorem	ill-defined term
little-known derivation	

Do not hyphen if the combination is being used as a predicate adjective or if well (ill, little) is modified by an adverb:

very well known model
less well defined terms

5. Preposition + noun or adjective

near-surface reaction	behind-arc spreading
near-normal wave mode	

6. "Quasi" + adjective or adverb (Also hyphenate as a predicate adjective.)

quasi-linear expression

When quasi is used with a two-part adjective, quasi can stand by itself:

quasi steady state system
quasi self-consistent model

7. "Self" compounds (Also hyphenate as a predicate adjective. Check the dictionary for approved closed forms.)

self-sustaining reaction

8. "Cross" compounds (Check dictionary for approved closed forms.)

cross-*L* sweep cross-section(al) diagram
cross-correlation function

9. "All" compounds (Also hyphen if the combination is being used as a predicate adjective.)

all-inclusive program
all-salt deposit

10. "No" compounds (Also hyphen if the combination is being used as a predicate adjective.)

no-flow boundaries

11. Fractions

two-thirds part

12. Temporary compounds formed by adjective + noun indicating number, dimension, or quality. These examples are not all-inclusive.

Cardinal number + noun or adjective

zero-base budgeting
one-dimensional figure (*k*-dimensional model)
two-fluid response

Ordinal number + noun

*n*th-order equation second-order equation

Single, double, triple, multiple, half, etc., + noun

single-chain reaction
multiple-layer model

High, middle, low, medium, long, short, large, small, intermediate, etc., + noun (but not upper and lower) (hot/cold and/or thick/thin may be hyphenated, follow usage)

high-energy particles
middle-latitude stations

Follow the author for combinations such as the following (do not hyphen if adjective is modified by an adverb: very high frequency signals):

low-*P* region
low-Mg samples

If you have both combinations in a paper (one modified by an adverb and one not, such as "high-frequency waves" and "very high frequency waves"), do not treat them similarly (i.e., do not hyphen both or leave both open). The presence of the adverb in the second combination makes the difference. For combinations such

as the following, preference is for no hyphen unless you are trying to match a similar combination elsewhere in the paper; then use two hyphens. For example, if "high-resolution" appears in the paper, hyphen "high-vertical-resolution."

Also hyphen regular -er and -est comparatives and superlatives of these adjectives when they are used in combination with nouns:

higher-energy particles
lowest-latitude sample

13. Colors in combination

bluish-green overlay
blue-gray particle

14. Attributive adjectives formed by a noun plus one of the following or similar words:

-type	-soluble	-specific
-(in)dependent	-rich	-only
-free	-wide(check dictionary for solid words)	-scale
-odd	-synchronous	-variable
-invariant	-inclusive	

For example,

pH-dependent finding
Fe-rich deposit (very Fe-rich deposit; very is modifying Fe rich, not just Fe)
C- and N-rich deposits (but do not use C-rich and -poor deposits)
grain-size particle

These combinations are also hyphenated if they are used as predicate adjectives.

Never hyphen. The following combinations should never be hyphened as attributive adjectives:

1. Irregular comparatives or superlative + participles or nouns

best known theorem
worst liked person
least known derivation

2. Foreign phrases

a priori solution
per mille basis
in situ technique

3. Adverbs ending in -ly + adjective or participle

slowly flowing stream
highly complex approach

4. Chemical compounds

ferric oxide layer
sulfuric acid residue

5. Light or dark + colors

light blue house
dark red hue

6. Compounds indicating direction or placement

north central Utah
upper right corner

7. Adverbs ending in -ward + participle

westward moving currents

8. Compass directions + present or past participles

northeast trending
south directed

9. Temporary compounds used as attributive adjectives formed by noun + noun or adjective + noun (see Word List at end of guide and dictionary for exceptions)

plasma flow region
wake surface potential

10. Permanent compounds (formed by noun + noun or adjective + noun that are used so often that they can be considered permanent compounds; many may be listed in the dictionary or the Word Llist)

solar wind	computer programing	electric field
magnetic field	data processing	ion cyclotron
cosmic ray	pitch angle	steady state
soil water	atomic oxygen	quiet time
linear programing	atomic nitrogen	sporadic *E*
molecular oxygen	molecular nitrogen	V notch
F region	γ ray	*x* component
P wave	*x* axis	

Hyphen optional. In a given paper, follow usage to hyphenate or not hyphenate the following categories of attributive adjectives.

1. Phrases that act as attributive modifiers

signal-to-noise ratio
month-by-month computation
order-of-magnitude change

If phrases are listed in the dictionary with hyphens, the hyphens are mandatory and should be added:

day-to-day variation
one-to-one basis

2. A hyphen in past/present participle + noun combinations should be left to avoid ambiguity:

charged-particle fluxes or charged particle fluxes

3. Numeral + unit of measure

2-cm pipe	5-foot (~1.5 m) booms
1-km-wide trench	5-year-old record
6-mm-diameter tube	9-year-old pine plantation
6-mile-wide highway	10- to 20-km-wide area

Note that two hyphens should be used only when the second word is a dimension (diameter, wide) or involves age (old), but do not hyphen 9 Ma as attributive: the 9 Ma trench. Do not hyphenate with compound units: 15 km s^{-1} velocity.

1.2. Nouns

In general, new compound nouns are spelled without hyphens. Check dictionary for permanent compounds listed there. If word is not in the dictionary and is not in the "Always hypenate" or "Close up" categories below, open up as two words.

Never hyphenate. The following combinations should always be open when they act as nouns in sentences:

1. Noun + gerund

   problem solving
   data logging

2. Fractions

   one half
   two thirds

Always hyphenate. The following combinations should always be hyphened:

1. "Self" compounds

   self-knowledge

2. Quasi + noun (unless open or closed in the dictionary)

   quasi-response
   quasiperiodic

When quasi is used with a two-part noun, quasi can stand by itself:

   quasi steady state
   quasi self-help

3. Verb + preposition (unless closed up in the dictionary)

   short-out
   drop-off

4. Noun or adjective + "like"

   floor-like or floorlike
   kelyphite-like or kelyphitelike
   but taillike (see dictionary)

Hyphen if the noun ends in "ll" or is a proper noun:

   bell-like, not belllike
   Mars-like, not Marslike

Close up. The following combinations are always closed up:

1. "Fold" compounds

tenfold multifold

Use numeral and hyphen if a hyphenated number would precede fold:

125-fold

2. "Glow" compounds

dayglow nightglow airglow

3. "Side" compounds

dayside	duskside	frontside
nightside	noonside	backside
downside	topside	underside

1.3. Words Formed With Prefixes

1. The following are some common prefixes:

pre-, post-,	un-, non-	re-
intra-, extra-	semi-	multi-
infra-, ultra-	pseudo-	micro-, macro-
sub-, super-	supra-	mini-, maxi-
pro-, anti-	co-	mid- (but mid-ocean)

This is not an inclusive list. Check dictionary for other prefixes and closed up forms. Note that “over” is a prefix, but “under” is not. Also, “fore” is a prefix, but “back” is not. Up and down are not prefixes.

2. Spell all words formed with these prefixes closed unless (1) the prefix precedes a capitalized word or a numeral (mid-Cretaceous, post-1950); (2) a homograph is formed (recover versus re-cover, to cover again; remark versus re-mark, to mark again); or (3) the same vowel would be repeated (intra-aggregate, semi-infinite), except co-, de-, pre-, pro-, and re- may be set closed even when a double vowel forms (preexist); but hypehnate if triple vowel results. Check dictionary for hyphenated words (un-ionized).

3. Use an en dash if the second element is a proper noun or proper adjective consisting of more than one word (pre–World War II, post–Civil War period).

4. Use two hyphens if the second element consists of more than one word (hyphened) (non-time-homogeneous equation, non-English-speaking people).

5. If the second element contains more than one word and is a combination that we never hyphen, match the solution to the type of prefix:
(1) Post-, pseudo-, and mid- can stand alone if necessary (i.e., can function as adjectives or adverbs); therefore use

pseudo magnetic field
post cosmic ray event

(2) Other prefixes are only in the dictionary as combined forms and cannot stand alone:

In some cases the meaning will permit the prefix to be attached to the first word of the second element: nonsteady state.

In other cases, use an en dash or rephrase: pre–solar wind or before the solar wind. Another option is to use two hyphens even though the element containing two words is not usually hyphened (e.g., pre-main-sequence).

6. When multiple prefixes precede the same base word, the prefixes should not stand alone; e.g., use preseismic and postseismic, not pre- and postseismic. Change mid- and high-latitude (as adjectives) to midlatitude and high-latitude or middle- and high-latitude.

1.4. Words of Equal Weight

A hyphen is used to connect words of equal weight. Usually, they are connected because they have an "either-or," "from-to," or "between-and" relationship:

wave-particle interaction	noon-midnight value	plant-soil system
air-sea interface	north-south range	time-space plot
desorption-absorption	precipitation-dissolution	

2. Commas

A comma should be used to clarify meaning. AGU uses the open punctuation style, that is, using only as much punctuation as necessary for clarity. Do not use balancing commas. Generally, commas are used around, before, and after nonrestrictive clauses and phrases. A nonrestrictive clause or phrases is one that could be omitted without changing the meaning of the sentence. Because of the technical nature of the material in AGU journals, it is sometimes difficult to be sure if a phrase or clause is nonrestrictive; follow usage in these cases. This section lists correct usage examples and house style. See WIT and *Chicago Manual of Style* for grammatical rules concerning comma usage.

2.1. Examples of Correct Usage

Use a comma

After the results were computed, we made a log plot of the data. (introductory adverb clause)
Using the data, we constructed a graph. (participial phrase)
To confirm the results, a second experiment was planned. (infinitive phrase)
The results being in question, the experiment was repeated. (nominative absolute)
In general, the results from the two studies are in agreement. (sentence modifier)
Initially, the current meters produced ambiguous data. (adverb ending in -ly)
After launching the satellite, scientists followed its trajectory by radar. (no strong natural break)
In the references above, the reader may find further details of the methodology used here. (could be misread)
After reweighing, the samples were subjected to further tests. (ends in verb form)
We performed the experiment at room temperature, but the results were not as good. (compound sentence)
In the cool, humid climate the plants thrived. (coordinate adjectives)
The samples were collected in a glass beaker, which had been washed, dried, and weighed. (nonrestrictive)
The data, the number of echo soundings per second, were entered into the computer. (nonrestrictive appositive)
The distance per unit time, or velocity, is important to this calculation. (nonrestrictive appositive)
While a few were sandstone, the rocks were mostly granite. (introductory subordinate clause)
Papers based on data from Pioneers 10 and 11 conclude that a magnetic field decreases, while papers based on the data from Voyagers 1 and 2 are consistent with the Parker model. (nonrestrictive clause)
At the mountaintop, where the air is thin, it is necessary to wear oxygen masks.
The altitudes above 120 km, where $O_3(v)$ fluorescence was too weak to be observed, provided data considered irrelevant for this study.
This follows the theory of *Smith and Ames* [1980], who solved the full MHD equations. (nonrestrictive phrase)
We interpreted a measurement of, say, 15 dbar to indicate that the system was at equilibrium.(independent element)
The expedition was a joint effort of American, Canadian, and French scientific societies. (series)
Thus, although in the first case the temperature is lowered, it did not affect the results.
If the lava flow were emplaced in this 550-year period, it would also have been entirely submarine. (If, then)
One hundred starting models are generated using a predefined set of velocity nodes, with a fixed window of allowable depth variations between nodes.

Do not use comma

In the absence of clear measurements it became necessary to extrapolate values for *L*. (strong natural break)
The results were uncertain; hence we did not use them.
Nappes therefore appear to have common history.
We dismissed data having excessively high or low values and plotted the remaining data on a *T-S* grid. (compound verb)
An examination of Figure 4 indicates that the midlatitude values are relatively low for this parameter and that high-latitude values are quite divergent. (parallel dependent clause)
In the area of the stratosphere where O_3 molecules are densest, damage by aerosols was the greatest. (restrictive phrases)
It was understood that given the above constraints, agreement would be tenuous. (before or after "that")
These migmatites remained within the field long enough to deform while they were partially molten.(before a subordinate clause at end of sentence)
Virtually all the Mauna Loa lavas encountered are interpreted to be subaerially emplaced. (exception to after -ly)

2.2. AGU Style

With parameters. It is not necessary to set off variables in text with commas (or parentheses) if they directly follow the parameter for which they stand (follow author if usage is consistent):

> The modeling equations can be closed by specifying the constitutive equations for the stress tensor $\mathbf{T}$ of gas and solids, drag *D*, and heat transfer *Q*.

However, if a phrase separates the variable and the parameter, then retain enclosures (either commas or parentheses but be consistent within a paper):

> The enthalpy (*h*), the thermal conductivity (*k*), and the volumetric heat transfer coefficient for the exchange of heat between the gas and pyroclasts (*Q*)....

Serial comma. Use a serial comma; that is, in a list of three or more, use comma before conjunction. In a numbered in-text list, a comma is sufficient to separate parts.

Numerals. Use comma only in numerals with five or more digits, including pages in reference list, except in tables (add comma to four-digit numerals if in column with five- or more digit numerals): 50,000, but use 5000 to 34,000 years in text.

Jr. and III. Do not use commas around or before Jr., Sr., or III except in reference list for first author in inverted order: House, J. H., Jr., and ....

2.3. Comma Usage at Beginning of Sentence (this list is not inclusive)

Always Use a Comma		Optional	(Almost) Never Use a Comma
Again	In part	For this reason	Here
Also	In particular	In turn	Hence
At the same time	In practice	Next	Now
For example	In total	Then	So
Furthermore	Instead	In this case	Therefore
However	Moreover	In this study	Thus
In addition	Nevertheless	In this paper	Yet
In any event	Nonetheless	Thereafter	
In contrast	Of course	At this point	
Indeed	On the other hand		
In essence	Rather		
In general	So far		
In fact	That is		
In other words			

2.4. Some Parts of Speech and Common Examples

1. Parts of speech (note that some words can function in more than one way) (not inclusive)

Prepositions

about
above
across
after
against
along
amid
among
at
before
behind
below
beneath
beside
between
beyond
by
concerning
during
except
excepting
for
in
inside
into
of
off
on
onto
out
outside
over
past
regarding
respecting
since
through
throughout
till
to
toward
under
underneath
until
up
upon
with
within
without

Compound Prepositions

according to
apart from
owing to
as to
on account of
aside from
because of
instead of
out of

Adverbs

-ly
hence
thus
therefore
so
yet
moreover
accordingly
consequently
as
then

Coordinating Conjunctions

and
but
or
nor
yet
so

Correlative Conjunction

not only....but (also)
both...and
either...or
neither...nor
whether...(or)

Subordinating Conjunctions

although
where
when
since
though
so that
while
whereas
because
if
that
which
until
as

2. Strong natural breaks (do not use comma after introductory prepositional phrase followed by a natural break unless ending in a verb form)

indefinite articles:	a, an
definite article:	the
demonstrative or definitive adjectives or pronouns:	this, that, these, those
indefinite adjectives:	each, both, either, such, some, many
distributive pronouns:	each, every, everyone, either, neither
indefinite pronouns:	both, any, few, many, none, one, some, such, several, most
personal pronouns and their declined forms:	I, he, she, it, we, you, they, my, mine, his, her, your, yours, their, theirs, ours, our, his, hers

3. Additional Grammar/Punctuation Rules

3.1. Adjectival/Adverbial Phrases

1. The following are adjectival (adjective + preposition), which can only modify a noun.

Due to: Since due to is an adjective, it needs a noun or pronoun to modify. To assure this functioning, the safest place for due to is after a form of the verb to be because there it always serves as an adjective: "The cancellation was due to bad weather" (due modifies the noun cancellation). "My failure to pay promptly was due to an oversight" (due modifies failure). The most dangerous placement of due to is at the head of a sentence. In "Due to rain" or in "Due to the lateness of the hour" or in "Due to a cold I was unable to attend," due to is treated as an adverbial phrase. This is a misuse. A test to determine whether due to is being used correctly is to replace it with “caused by” or “attributed to,” which is what due to means. If the replacements make sense, due to is correctly used, as it is in "The explosion was due to [caused by or attributed to] carelessness."

> His failure was due to insufficient study.

Compared to (or compared with): Use compared to for unlike objects: Shall I compare thee to a summer's day. Use compared with for like objects: Shall I compare thee with my ex-husband.

2. The following are adverbial (adv + prep), which can modify a verb, an adjective, or another adverb: Owing to (because of, on account of), in comparison to, in relation to

> He failed owing to [because of] insufficient study.
> This paper was short in comparison with the previous one.
> Height in relation to depth was the important factor.

Based on “Based on” phrases should only modify nouns not verbs. Change to “on the basis of” at beginning of sentences and if modifying a verb, e.g., “the results based on Smith’s theory...” but not “Based on Smith’s theory, we found”

3.2. Comprise Versus Compose

1. Whole (subject) comprises parts (object) (must be active verb): The book comprises five chapters.
2. Parts (subject) compose (make up) a whole (object):

> These chapters compose this book.
> This book is composed of three chapters.

Never use comprised of; change to composed of.

3.3. Singular Versus Plural With Certain Nouns

1. Number: “A” takes plural verb: A significant number of points are in large disagreement with (2) and (3).

"The" takes singular verb: From Table 3 it is apparent that the number of points over which averages are taken varies considerably between data divisions.

2. Set and group (collective nouns) should take singular verb unless the individuals of the group are to be emphasized. Authors often have either one intention or the other, so it is best to follow the author's usage unless it is found to be totally incorrect.

A set of points, such that *N* and *X* are both ... are defined as feasible designs for satisfying the information demand of the *n*th parameter.

Furthermore, the set of nonzero Lagrange multipliers represents the set of trade-off ratios between the principal objective and each of the constraining objectives.

3. "Data" must take the plural verb; however, "geodetic datum" is singular, and "geodetic datums" is plural.

4. "Series" can take singular verb if individuals in series are not emphasized:

A series of models have been constructed that approximate the measured horizontal disturbance at the Earth's surface derived by *Langel* [1973].

The series that we used helps to identify the position of the vector.

5. “The” percentage always takes a singular verb. “A” percentage can take either a plural or singular verb depending on object of preposition: A substantial percentage of these individuals are quite sure that they have made the best decision.

6. Percent can take either plural or singular verb depending on object of preposition: Roughly 8% of all proton velocities were contoured./About 9% of the field was rejected.

7. Total takes a singular verb:

A total of 98 field stations was established with an elevation range from 4400 to 9000 m.

8. Chain takes a singular verb: The changes in neutral composition trigger a complex chain of events, which affects not only the distributions but also the emission rates.

9. Proportion can take either plural or singular verb depending on object of preposition: A relatively larger proportion of bound H_2 molecules emerge and flow from the hotter dayside to the cooler nightside.

10. Sequence takes a singular verb: The following sequence of boundary conditions is therefore obtained for the free surface geometry.

11. Part (determine singular or plural sense)

Part of the results of the simple model are compared with magnetic field mappings of Imp and Mariner 5.
The part that we used was not properly verified.

12. Fraction (determine singular or plural sense)

A large fraction of the reports available are clustered over the continent.
A fraction will be chosen that is indicative of the actual cost per person.

3.4. Other Rules

1. Retain subjunctive mood, but do not change the verb to the subjunctive: e.g., It is required that the glass container be airtight. (See WIT (3rd ed., pp. 342-343) for a discussion of the subjunctive mood.)

2. Punctuation before i.e. (comma versus semicolon) varies depending on what function the material following i.e. plays in the sentence. If it is a noun or a phrase, a comma should be used. If it is an independent clause, a semicolon is necessary and change i.e. to "that is."

> We have used only data in which the difference is larger than 30%; that is, we have used only data...
> We have used only data in which the difference is larger than 30%, i.e., only those over 20.3.

The first example is an independent clause, and the second is a noun (the direct object).

3. So that of purpose versus so that of result: So that of purpose (i.e., in order to) is not preceded by a comma ("that" may be understood): Andy put on his sun glasses so that he could see.

So that of result (i.e., as a result) is preceded by a comma ("that" may be understood): John stepped in the wet cement, so he ruined his new shoes.

4. Do not use colons after forms of the verb "to be," after prepositions, or to separate a verb from its object. Colons may be used after forms of "to follow." If you want to retain the colon for any of the above cases, insert "as follows" or "in the following" or "for the following." Capitalize word after colon for independent clauses.

5. AGU style is to avoid em dashes. They should be changed to either commas or parentheses if there are two or to a colon if there is one.

6. AGU style does not use understood verbs.

Change the following from “The group of incompatible elements that form ore deposits are related to S-type granites and the more compatible to I-type granites.” to “The group of incompatible elements that form ore deposits are related to S-type granites, and the more compatible are related to I-type granites.” (Repeat verb and add a comma.)

Also watch for understood verb forms such as infinitives in a series. Change “The electronic data from the abstract will be used to create databases, new alerting services, and to develop products for scientists” either to “The electronic data from the abstract will be used to create databases, to create new alerting services, and to develop products for scientists” or to “The electronic data from the abstract will be used to create databases and new alerting services and to develop products for scientists”

After equations a list variables and their definitions may be given in paragraph format. If “is” or “denotes” is used for the first and last but left out for the in-between ones, add the verb for all or rephrase to delete all. For example,

$$x = (ba + c)/[(d - 1) + m],$$

where x is the random variable, b the balloon, a the area, c the content, d the distance, and m is the mean. Change to “where x is the random variable, b is the balloon, a is the area, c is the content, d is the distance, and m is the mean.” Or reword to delete all verbs: “where the variables are defined as follows*:* x, random variable; b, balloon; a, area; c, content; d, distance; and m, mean.” (These can also be changed to in-text notations lists if more than three variables are listed.)

4. Spelling

Any variant spelling listed in the dictionary may be used as long as it is consistent throughout the paper. If spelling is not consistent, make it consistent by making all occurrences of the word conform to the spelling used most often. Either spelling in the pairs that follow is acceptable according to the dictionary:

4.1. Alternate Spellings

Acceptable

aesthetic/esthetic
alignment/alinement
analog/analogue
supersede/supercede
subtract/substract
spatial/spacial
coterminous/conterminous
anaerobic/anerobic
appendixes/appendices
indexes/indices (but always indices for scientific/mathematical indicators, dictionary, index 8)
synthesize/synthetize
terrain/terrane (see dictionary; different meanings)
matrixes/matrices
sulfur/sulphur
sparce/sparse
imbalance/inbalance
grey/gray

Not acceptable (but do not fix figures)

1. Double final consonants before endings (inflections); use the shorter form in text if both forms are given in the dictionary:

equaled	not equalled (but controlling)
focuses, biases	not focusses, biasses
focused, biased	not focussed, biassed
pluses	not plusses
modeling	not modelling

2. Suffixes "-ment" and "-able"; use the shorter form in text if both forms are given in the dictionary:

judgment	not judgement
acknowledgment	not acknowledgement
sizable	not sizeable (but noticeable)

3. American versus British spellings; use the American rather than the British spelling in text:

behavior, favor, color	not behaviour, favour, colour
advertise	not advertize
meter, center	not metre, centre
inflection	not inflexion
analyze	not analyse
draft	not draught

4.2. Commonly Used Proper Names (unusual spellings or accented letters)

If accents are consistently not used, do not add them.

Alfvén
Avé Lallemant (author)
Bénard (associated with cells or convection)
Bouguer (gravity anomaly)
Chappuis (band)
Debye (theory, constants) (in combination w/Scherrer)
Eötvös
Grüneisen (parameter - gamma)
Kirchhoff
Kolmogorov-Smirnov (goodness of fit test)
Lagrange (constant)
Lamé (constant)
Laplace
Le Pichon (author: first initial X (Xavier)
Milankovitch
Mohorovičić (Moho, no accents with "discontinuity")
Murnaghan (as in Birch-Murnaghan equation)
Néel
Poisson (ratio, sigma)
Rayleigh (wave, number)
Savonius (rotor)
Toksöz
Larmor
Brunt-Väisälä
von Kármán
Clapeyron
Boltzmann
Crank-Nicolson (no “h”)

4.3. Countries

1. Former Soviet Union Countries

The following is a list of spellings used by Webster's and the State Department for the Baltic States and the Republics which were formerly part of the Soviet Union. Change to these spellings.

Name	Adjective	Capital
Armenia (Hayastan, use Armenia)	Armenian	Yerevan
Azerbaijan	Azerbaijani	Baku
Belarus	Belarus	Minsk
Estonia	Estonian	Tallinn
Georgia	Georgian	Tbilisi
Kazakstan	Kazak	Almaty
Kyrgyzstan	Kyrgyz	Bishkek (formerly Frunze)
Latvia	Latvian	Riga
Lithuania	Lithuanian	Vilnius
Moldova	Moldovan	Chisinau (formerly Kishinev)
Russia	Russian	Moscow
Tajikistan	Tajik	Dushanbe
Turkmenistan	Turkmen	Ashgabad
Ukraine	Ukrainian	Kyyiv (Kiev)
Uzbekistan	Uzbek	Tashkent

2. Prefectures of Japan With Their Capitals

Prefecture	Capital	Prefecture	Capital
Aichi	Nagoya	Miyazaki	Miyazaki
Akita	Akita	Nagano	Nagano
Aomori	Aomori	Nagasaki	Nagasaki
Chiba	Chiba	Nara	Nara
Ehime	Matsuyama	Niigata	Niigata
Fukui	Fukui	Ōita	Ōita
Fukuoka	Fukuoka	Okayama	Okayama
Fukushima	Fukushima	Okinawa	Naha
Gifu	Gifu	Ōsaka	Ōsaka
Gumma	Maebashi	Saga	Saga
Hiroshima	Hiroshima	Saitama	Urawa
Hokkaidŏ	Sapporo	Shiga	Ōtsu
Hyōgo	Kōbe	Shimane	Matsue
Ibaraki	Mito	Shizuoka	Shizuoka
Ishikawa	Kanazawa	Tochigi	Utsunomiya
Iwate	Morioka	Tokushima	Tokushima
Kagawa	Takamatsu	Tōkyō	Tōkyō
Kagoshima	Kagoshima	Tottori	Tottori
Kanagawa	Yokohama	Toyama	Toyama
Kōchi	Kōchi	Wakayama	Wakayama
Kumamoto	Kumamoto	Yamagata	Yamagata
Kyōto	Kyōto	Yamaguchi	Yamaguchi
Mie	Tsu	Yamanashi	Kōfu
Miyagi	Sendai		

5. Capitalization

Because AGU is interdisciplinary, the capitalization scheme of each discipline within the geophysics community cannot be followed. The exception would be a group of papers appearing in a special section (or companion papers). A decision should be made on how to treat certain words, based on office style, or perhaps an editor's preference, and capitalize/lowercase consistently in all papers in the SI. (See *Words Into Type* (WIT) for treatment of questions not considered here.)

5.1. Geographical Terms

1. The following may be either capitalized or lowercased except as indicated under point 2 below. If usage in a paper is inconsistent, lowercase underwater or geological features (anticline, arc, bank, basin, butte, channel, crater (e.g., on Earth, the Moon, or Mars), fault, fold, formation, geyser, glacier, mount, plate, plateau, ridge, rill, strait, syncline, trench, trough, volcano) unless they are part of the legally recognized name of the feature in question; this can be verified by checking *Webster's Geographical Dictionary* or an atlas. Terms such as convergence, divergence, currents, swells, water masses, and jets (air currents) have varying degrees of importance to different types of authors (biologists, chemists, geologists).

2. The following is AGU style for commonly occurring geographical terms. This is not an inclusive list. Check atlas for recognized geographic features. Note that generic terms such as lake, mountain, river, or valley are captialized when used with a proper name no matter how they are listed in an atlas or gazetteer, except if "the/a river" precedes the proper name: the river Elbe. Also, Hudson River valley. Lowercase plurals of geographic features, e.g., Atlantic and Pacific oceans, even if they are capitalized when singular.

Africa, North, East, West, but central
Alps, Southern, Eastern, and Western, but northern and central; also Southern Alps for New Zealand
Andes, sub-Andes, central Andes, inter-Andean
Arctic Ocean
Asia, Southeast, central, southeastern
Atlantic Ocean, North, South, but northern, southern, central
Caspian Sea (not divided, east, west, north, south)
China, south
Coastal Plain (U.S.)
Earth (as planet rather than substance), but earthward and terrestrial
East Africa
East Antarctica
East Antarctic Ice Sheet
East China Sea
east coast, but West Coast
eastern Mediterranean Sea
east Greenland
East Siberian Sea
equator, equatorial
Europe, central, eastern, and western (capitalize Eastern and Western Europe only in political sense, rare)
Faeroe Islands (or Färoe)
Gobi desert
the Himalayas (or the Himalaya), Outer, Greater, Lesser, but central, middle, lower
Iceland-Greenland-Norwegian Seas (order may vary)
Indo-Pacific
island of Hawaii (or Hawai'i) (follow au for accent except when referring to the state of Hawaii, no accent)
Jupiter, Jovian, Jovicentric, Jovigraphic
Mars, Martian
Mediterranean Sea
Mediterranean, western/eastern, but Arctic mediterranean seas (mediterranean in this case is generic in meaning, i.e., land-locked or mostly land-locked, here referring to several seas within the Arctic as a group)
Middle East (or Mideast)
Midwest
Mojave Desert
the Moon, but lunar
Negev (desert, if used, is lowercased)
New York City (but follow author for adding "City")
Nordic seas
Northern Hemisphere (Earth only)
North Pole (Earth's only)
North Sea
open ocean
Pacific Northwest (but northwest Pacific)
Pacific Ocean, North, South, but northern, southern
Pan-African
Pan-American
plate (follow author within paper for capitalization): African, Antarctic, Arabian, Australian, Caribbean, Cocos, Eurasian, Farallon, Indian, Juan de Fuca, Nazca, North American, Pacific, Philippine, Scotia
Sahara (desert, if used, is lowercased)
Sea of Japan (preferred), or Japan Sea
solar system
Southern Hemisphere (Earth only)
south China
South China Sea
Southeast Asia, but southeastern Asia
Southern Ocean
South Indian Ocean
South Pole (and South Pole Station) (Earth's only)
South Shetland Islands
the Southwest (only when referring to southwestern United States)
sub-Sahara, subalpine, sub-Andean
the Sun, but sunward and solar
Takla Makan, use Taklimakan

Taklimakan desert
Tibetan Plateau or Plateau of Tibet (aka Qinghai-Xizang Plateau) but not Tibet Plateau
transatlantic
Venus, Venusian, Venus's
Victoria Land
West Antarctica
West Africa
west Australia
Western Australia (if state meant)
western Siberia
west Greenland
world ocean
the West (of U.S.) the North, the South, the East, and West Coast

3. Use the following for both nouns and adjectives: Arctic and Antarctic (however, arctic may be lower-cased in papers that do not use Antarctic; follow author). Use subarctic and subantarctic as adjectives, but sub-Arctic and sub-Antarctic as nouns. Note that Antarctica is the continent and Antarctic is the region.

4. Use state of Washington, but use Washington State.

5.2. Text Capitalization

1. In level 1-4 heads, capitalize all words of more than three letters.

2. Capitalize adjectives derived from proper names: Kelvin, Martian, Lambertian, Stokes.

3. In text, capitalize Figure 2 and Table 1 but lowercase model 1, section 1, and equation (2) (and related examples). However, follow usage for capitalization of Ocean Drilling Program's (formerly Deep Sea Drilling Project) Hole, Site, Leg when used with number, e.g., Site 43, Hole 128, Leg 26.

4. Protected trademarks are capitalized (Teflon, Plexiglas, Pyrex, Freon, etc.). When a trademark is used, do not capitalize the common noun portion (Pyrex beaker). See WIT, 3rd ed., p. 172 for now unprotected former trademarks (use lowercase).

5. Lowercase law, such as Snell's law.

6. Lowercase is preferred for experiments, watersheds, instruments, models, and the like, but follow usage for well-known experiments. The general rule for instruments is to lowercase them when they are generic terms (i.e., there are several of such instruments). If unique, capitalize (usually on satellites).

7. Follow usage for rock names. Both capital and lowercase may be used for the same rock within a paper, as they have different connotations. For example, Westerly Granite is a granite with a specific chemical composition, whereas Westerly granite is a more generic term. Also, follow author for Groups and Members.

8. Explosions are initial cap only, e.g., Cowboy, Salmon, Sterling.

9. Capitalize Hurricane/Typhoon when used with a specific name: Hurricane Andrew, Typhoon June.

5.3. Stratigraphic Divisions

Capitalize the attributive adjective (e.g., early, lower) only if it appears here as an officially recognized subdivision; otherwise, use lowercase: late Cenozoic, early Paleozoic, early Pleistocene, Late Jurassic, Upper Permian. See p. 949 of *Webster's Third International Dictionary* for spelling of smaller units.

Era	Period	Epoch
Cenozoic (variation: Cainozoic)	Quaternary	Recent (Holocene) Pleistocene
	Tertiary	Pliocene } Neogene[Neocene] Miocene } Oligocene Eocene Paleogene Paleocene
70 m.y. ago (70 Ma)		
Mesozoic	Cretaceous	Upper (Late) Lower (Early)
	Jurassic	Upper (Late) Middle (Middle) Lower (Early)
	Triassic	Upper (Late) Middle (Middle) Lower (Early)
160 m.y. ago (160 Ma)		
Paleozoic 230 m.y. ago	Permian	Upper (Late) Lower (Early)
	Pennsylvanian	Upper (Late) Middle (Middle) Lower (Early)
	Mississippian (Carboniferous Systems)	Upper (Late) Lower (Early)
	Devonian	Upper (Late) Middle (Middle) Lower (Early)
390 m.y. ago		
	Silurian	Upper (Late) Middle (Middle) Lower (Early)
	Ordovician	Upper (Late) Middle (Middle) Lower (Early)
500 m.y. ago	Cambrian	Upper (Late) Middle (Middle) Lower (Early)
Precambrian Proterozoic 620-2300 m.y. ago Archeozoic		Upper (Late) Middle (Middle) Lower (Early)

6. Numbers

6.1. Cardinal Numbers/Arabic Numerals

Use numerals

1. For 10 or higher; write out under 10, except as indicated below.

2. With units of measure (abbreviate units if possible).

3. To make numbers under 10 consistent with larger numbers in a series:

> We used data from 6 experiments in the first graph and from 12 to 14 experiments in the second and third graphs, respectively.

4. With divisions (part, paragraph, section, rule, model): model 1, section 2, log 1, case 1 (do not change from roman to arabic if roman numerals are used in figures or if from a non-AGU source).

5. When implying an arithmetical manipulation: a factor of 7, 4 orders of magnitude, magnification of 50 (50X, use capital "ex" closed up to number), 5 times the height; use either 2 or two standard deviations (follow usage but be consistent).

Write out

1. For one through nine except as indicated above.

2. At the beginning of sentences, a head, or a title (if followed by a unit of measure, spell it out too: Ten kilometers...; or rephrase so that the number (and its unit of measure) does not begin the sentence, head, or title). If necessary to write out, hyphenate (both as noun and adjective) cardinal and ordinal numbers if compound: e.g., twenty-one, twenty-first. However, one hundred is not hyphenated (see number table in the dictionary).

6.2. Ordinal Numbers

Spell out ordinal numbers (first, second, third, etc.) unless hyphenated (e.g., twenty-first, use 21st) in text. If nonhyphenated form used in conjunction with hyphenated, use numbers for all: 21st, 50th, 92nd. Use the numeral and suffix form (1st, 2nd, 3rd, etc.) in references (e.g., 1st ed.). Use *n*th, (*n* - 1)th, etc. (i.e., “th” is on line and not italic.

6.3. Miscellaneous Style for Numbers

1. Give full ranges for pages or years; for example, change 801-6 to 801-806 and change 1979-80 to 1979-1980.

2. Mixed forms are permissible for very large numbers: 5 million; 2.3 billion or use 5×10^6; 2.3×10^9.

3. Insert a zero before the decimal point in a numeral less than unity; 0.002, not .002. However, do not add a zero after decimal point (e.g., 20.), but do retain decimal; adding a zero would change the degree of precision of the measurement.

4. Do not use roman numerals in names of artificial satellites, rockets, etc.: Explorer 8, Vanguard 3, Surveyor 1, OGO 3.

5. Do not use roman numerals for figure numbers or table numbers: Figure 5 and Table 2.

6. Spell out a number that directly precedes or follows a numeral: ten 2-m strips; 136 two-hour lectures (see WIT, p. 127)

7. Miscellaneous Style Rules

1. For direct questions it is okay to capitalize the question: The question is raised, How reliable are the results?

2. Do not begin sentences with lowercase Roman or Greek letters or numerals. Enclosures are ok, e.g., [, ⟨, (, as are capital Greek letters, e.g., Δ,Φ.

3. Latin phrases are not italicized except genus and species names. Use a priori, aposteriori, in situ, ad hoc, ab initio, but translate sensu (in the sense of), sensu strictu (in a strict sense), inter alia (among other things), and nota bene or N.B. (note that). This is not a complete list.

4. Italics (or boldface or all capitals) are not used for emphasis or definition (double quotes may be used for definition; see below).

5. Use double quotes, not single quotes. If used frequently, delete after first use around a specific word or phrase in both abstract and text.

6. Periods and commas go inside closing quotes; semicolons and colons go outside.

7. AGU date format. Never use, e.g., 1/3/80, 010380, or 1-3-80. Use 1 March 1980 (not the 1st of March):

1–3 March 1980,
between 1 and 3 March 1980, we observed...
1 March to 1 April(not 1 March–1 April)
March 1980 to August 1981
March–April 1991

En dashes should only be used between like things: 1–12 March 1983; but change 1 March–10 April to 1 March to 10 April.

8. Use 1980s for decades (not 1980's).

9. Do not use the word “number” (or no. or #) if it can be avoided without affecting meaning. However, for sand or grit it is permissible to use #: #5 sand and #3 grit. Another permissible use is for Mg #. In most usages, number can be eliminated, e.g., for run no. 5, run 5 is quite sufficient. Use, e.g., model 1, run 5, experiment 3, well 5, sample 2568D5, borehole 356, Site/Hole 835. Sometimes context may indicate a substitute for “number,” e.g., for “Three earthquakes occurred in the 1980s, #385, #886, and #589,” the term “event” can be substituted for #: “Three earthquakes occurred in the 1980s, events 385, 886, and 589.”

10. It is permissible to use “(?)” after stratigraphic division (closed up).

11. Use “the notation section.”

12. When an author cross-references numbered observations, trends, etc., parentheses are not used (i.e., "observation 1," not "observation (1)"). Parentheses are reserved for equations and reactions.

13. Delete “s” in -ward words: toward, northward, etc.

14. In text, spell out fractions. Use "two thirds of the people" (noun form) and "two-thirds the width of the table" (attributive adjective).

15. Always use degree sign with N, S, E, W: 24°N not 24N.

16. Write out N, S, E, and W when used alone (N-S, E-W okay). Okay to use NNW, etc. (don't change to N-NW; see the dictionary), e.g., air masses from the east, SE, and NW; also N20^{o}E okay.

17. "Not only" must be followed by "but [also]" (the “also” is optional):

Correct: The day is not only long but also very hot.

Incorrect: The day is not only long, but also it is very hot.

Note that the "but also" may be interrupted. Use comma only if independent clause. Be sure “also,” if used, is placed correctly, i.e., parallel construction.

18. Use "between..and": between 5 and 10 days but not between 5-10 days.
Use "from...to": from 5 to 10 days, not from 5-10 days.

19. "Respectively" (surrounded by commas) should be as close to the end of the statement as possible:

H and *D* are the height and depth, respectively, of the trench.

Not

H and *D*, respectively, are the height and depth of the trench.

20. Further versus farther: Use farther when indicating a physical direction or movement:

The point is farther from *x* than it is from *y*.

Use further otherwise:

Further research should explain this discrepancy.

21. Don’t use contractions.

22. Use of “a” versus “an” before abbreviations: follow usage before an abbreviation that would take an “an” if pronouced as the abbreviation , e.g., FFT, but would take an “a” if full form used, e.g., fast.

23. Use “of the order of” for mathematical usages indicating. e.g., order, rank, category. Use “on the order of” only to mean “approximately” or “similar to.”

24. Change firstly, secondly, thirdly, etc. to first, second, third, etc.

8. Word List

The following is a list of words commonly occurring in AGU papers and their treatment (hyphenation, spelling, capitalization, etc.) according to AGU style. This is meant as a quick reference (versus researching meaning and consulting dictionaries, atlases, source books, etc.). Note that (n, adj) should be assumed if not otherwise indicated. If (adj) given, assume open as noun and verb.

aboveground (adj)
above mentioned
acoustic-gravity wave
advection-dispersion (n)
advective-dipersive (adj)
airborne (adj)
air fall
airflow
airglow
air gun
air mass
airstream
all-sky (adj)
alongshore (adj)
along track (n) along-track (adj)
a priori
arc length
ashfall
ash flow
aspect angle
atomic nitrogen
atomic oxygen
back arc
backprojection (time)
back projection (space)
backscatter (n)
back slip
back thrusting (adj)
back trail (n, adj) backtrail (v)
back trajectory
band-pass (adj), band pass (n)
bandwidth
bank-full (adj)
base flow
baseline
beam width
bed form
bed load
belowground (adj)
bench mark vs. benchmark
(see the dictionary)
best fit (adj)
best-case (adj)
bio-optical
blackbody
blowup (n) blow up (v)
body wave
borehole
bottom hole (n)
bottom-hole (adj)
bottom water
boundary element (adj)
boundary layer
bow shock
breakout (n, adj), break out (v)
breakpoint
breakup (n, adj) break up (v)
bright-field (adj)
broadband (frequency)(adj)
broadleaf
buildup (n, adj) build up (v)
bull's-eye
burnout (n) burn out (v)
burn-out (adj)
bypass (n, adj, v)
by-product
calc-alkaline (adj)
caprock
centerline
centroid depth
centroid moment
check shot
chi-square (not "squared")
clay stone
clear-cut (n, adj, v)
clear-sky (adj)
close-up
cloud base
cloud top
cold-core (adj)
(also warm-core)
colocate vs. collocate
(follow au)
computer programing
convection-diffusion (n)
convective-dispersive (adj)
core hole
cosmic ray
cost-effective (adj)
cost-effectiveness (n)
counterexample
counterstreaming
country rock
coworker
creep meter
crisscross (n, adj, v)
cross-correlated
cross correlation (n)
cross-correlation (adj)
crosscut (n, adj, v)
cross-fold
crossover
cross plot (n) cross-plot (adj)
cross section (n),
cross-section (adj, v)
cross-sectional (adj)
cross track (n) cross-track (adj)
cutbank
cutoff (n, adj) cut off (v)
dark-field (adj)
dashpot
database
data logger
data pool
data processing
data set
datasonde
date line vs. dateline (n, ✓
meaning), dateline (v)
day-to-day (adj)
dead end (n) dead-end (adj)
deaerate (v)
de-air (adj)
décollement
deep sea (n) deep-sea (adj)
deep water (n), deepwater vs.

deep water (adj)(✓ meaning)
Digisonde (instrument, cap)
dipmeter
dip slip (n) dip-slip (adj)
Doppler radar
double couple (n)
double-couple (adj)
downdip
downgoing (adj)
downleg
downrange
downscale
downwelling
drawdown (n, adj),
draw down (v)
drill hole
drop-off (n, adj), drop off (v)
dropout
dropsonde, dropwinsonde
dry land (n, adj) dry-land (adj)
or dryland (adj) (see Web)
earth-atmosphere (adj)
easting (see Web 10)
echolocation
echo sounder
electric field
e-mail
end-member
end point vs. endpoint
(see Web 10)
en echelon (adj, adv)(not
italic)
equal-area (adj)
exceedance (n)
falloff (n) fall off (v)
far-field (adj)
far-reaching (adj)
farside
(however, ✓ meaning)
fast spreading (adj)
fault plane
fault slip
fault-trench (adj)
fault zone
fiber optic (n),
fiber-optic (adj)
field of view (n)
(follow au as adj)
fine structure (adj)
finite difference
finite element
fission track
flare-up
floodplain
flowchart
flow field
flow line
flowmeter
flow path
flow rate
fluxgate
flyby
foot points
footwall
forearc
foredeep
free air (n) free-air (adj)
free fall (n) free-fall (adj, v)
freeze-up
F region
frequency domain
freshwater (adj) (also as
noun meaning lake)
F test
γ ray
gasdynamics
gage, change to gauge
Geodimeter (trademark)
(hyphenate as Geo-dim-eter)
Geodolite (trademark)
goodness of fit (n)
gradient drift
gravel bed
gravity-capillary wave
gray body
gray scale
great circle
grid point
groundmass
ground track
groundwater
ground wave
gyro- (closeup, prefix)
gyrofrequency
gyroperiod
gyroradius
half-cell
half-length
half-life
half plane
half-space
halfway (adj, adv)
half width (n) half-width (adj)
H alpha, use H α
hanging wall
head-on (adj, adv)
headwall
headwater
head wave
heat flow
heavy-duty
hillslope
hot spot
hourglass
ice core
ice raft (n, adj), ice-raft (v)
ice sheet
ice stream
in-between (n, adj)
in between (adv, prep)
in-depth (adj)
infill (v)
in-flight
inflow
in-house
in-phase (adj) (inphase, adj,
electrical only)
in-place (adj)
inshore
in situ (not italic)
intermediate-depth (adj)
intra-aggregate
Invar (trademark)
ion cyclotron
island arc
jet stream
Kapton (protected
trademark)
knickpoint
kriging
lab frame

lag gravel
landfill
landform
landmass
land use (adj)
latewood
leapfrog (n, adj, v)
least cost
least squares
(not "square")
left-lateral (adj)
light-duty
linear programing
line of sight (n)
(follow au for adj)
line source
log conductivity
log likelihood
log linear
log-log
lognormal
log-periodic (antenna)(adj)
log transmissivity
long-lived
longwave vs. long wave (n)
longwave vs. long-wave (adj)
(follow au)
loss cone
low-pass (adj)
lunisolar
magnetic field
main shock
main stem
mainstream
makeup (n, adj) make up (v)
man-made
mass balance
mass transfer
Matlav (trademark)
mean square
melt-rock (adj)
meltwater
midlatitude
mid-ocean
midpoint
molecular nitrogen
molecular oxygen
monthlong
moveout (n, adj), move out (v)
mudflow
mudstone
multi-instrument
narrow band (n)
narrowband (adj)
near-field (adj)
nearshore
nearside
needleleaf
the Net
Netherlands (no "The" per
research 1/26/93)
nighttime
non-ice (adj)
nonsteady state
northing (see Web 10)
now casting (v)
null-space
oceangoing
Octol (trademark)
off-line (adj, adv)
offshore
onboard (adj)
on board (otherwise)
online
ongoing
O-ring
output
outward-bound (adj)
ovendry (adj) oven-dry (v)
ozonesonde
paddy land
passband
pastureland
path length
path line
path loss
payback (n, adj) pay back (v)
peatland
pickup (n, adj), pick up (v)
piecewise
piggyback
pileup
pitch angle
pitch-up
plane-parallel
plane wave
planform
plan view
plasmapause
plasma sheet
plasmasphere
playback (n, adj) play back (v)
Plexiglas (trademark)
pore fluid
pore pressure
pore size
pore water
power law
present-day (adj)
pull-apart
pulse width
P wave
quasiperiodic
quick flow
quiet time
radio astronomy
radio decay
radio echo
radiolocation
radio physics
radio source
radio wave
rainband
raindrop
rainfall-runoff
rain flag
rain forest
rain gauge
rain splash
rainwater
rare earth
ray path
readout (n, adj) read out (v)
real time (n) real-time (adj)
real-world (adj)
red beds
reefal (adj) (don't use reef)
resource management
rest frame
ridgetop
right-hand (adj)

right-lateral (adj)
ring beam
ring current
ring width
risetime
river flow
rock burst
rocket-borne
rocketsonde
rockfall
rock mass
rock salt
roll-off
rollover (n, adj) roll over (v)
room temperature
Rossby-gravity wave
round off (v)
runoff (n, adj), run off (v)
run-up
saltwater (adj) salt water (n)
sandbar
sandblow
sand-shale (adj)
sandstone
saw cut
scale length
scatterplot
SeaBeam
seabed
seafloor
sea level
SeaMARC I and II
seamounts
sea salt (n) sea-salt (adj)
seawater
seismic reflection
semi-infinite
setup (n) set up (v)
shallow mixing layer
shear hole
shear wave
ship track
short-lived
short-period (adj)
shortwave vs. short wave (n) & shortwave vs. short-wave (adj) (follow au)
shot point
shut-in (n, adj) shut in (v)
sidearm (except guns)
sideband
sidelobe
side-looking (adj)
side scan
side-scan sonar
side scatter
sidewall
signal-to-noise ratio
siltstone
sine taper
sky wave
slack water (n) slack-water (adj, v)
slipstream
slope wash
slow spreading (adj)
snow cover
snow line
snowmelt
snowpack
so-called (adj)
soft water
solar-terrestrial (adj)
solar wind
solid-state (adj)
source time
spaceborne (adj)
spatiotemporal (adj)
spillover
spin-up
sporadic *E*
stage-by-stage (adj)
stage-discharge
stair-step (adj)
standoff (n, adj) stand off (v)
standpipe
state of the art (n) (follow au for adj)
state space (adj)
steady state
stemflow
step-by-step (adj)
step over
stepwise
stick slip (n) stick-slip (adj)
stillstand (n, adj, v)
stockwork
storm flow
storm water
straight line (n) straight-line (adj)
strain meter
strain rate
strandline
stream bank
streambed
streamflow
stream function
streamline (n, adj, v)
stream sediment
stream water
strike slip (n) strike-slip (adj)
strong motion
Sun photometer
sunspot
surface water
S wave
tailrace
tailwater
takeoff (n, adj) take off (v)
terrain vs. terrane (see AGI Glossary of Geology)
test ban
test bed
thermite (generic)
thermomechanical (adj)
thin sheet
throughfall
through flow (except Indonesian Throughflow)
throughgoing
tie line (or tie-line for phone lines)
tiltmeter
time-consuming (adj)
time delay
time domain
time-lapse photography
time period

timescale
time series
time step
topsoil
Tovex
trace element
track line
trade-off (n, adj)
  trade off (v)
trade winds
travel time
tree line
tree ring
trimline
turnoff (n) turn off (v)
turn-on (n) turn on (v)
tweeks (JGR-A)
Umkehr (return reversal effect)
under way (adv)
  underway (adj)
un-ionized
upcrossing
updip
upgoing
upleg
upscale (n, adj, v)
up-to-date
V notch
velocity-depth (adj)
velocity space
vice versa
volcanos (or volcanoes)
wall rock
wastewater
water mass
water rights
watershed
water table
wave band
wave field
waveform
wave front
wave function
wave group
waveguide
wavelength
wave mode
wave number
wave packet
wave path
wave power
waveshape
wave speed
wave train
wave vector
weighted-residual
well-being
well bore
wellhead
wellhole (n) well-hole (adj)
well-known (adj)
  well known (otherwise)
well water
whistler mode
whole rock
wide-angle
wideband (adj)
wide-ranging
wind-borne (adj)
wind field
wind forcing (adj)
wind speed
wind stress
wind-wave tank (only)
wire line
World Wide Web (the Web)
worst-case (adj)
X ray (n), X-ray (adj)
x, *y*, *z* (axis coordinates)
yearlong (adj)
year-round (adj)
zeros or zeroes (spelling)