

**Consider the following details in each field when compiling an article:**

**Sample Name:**

If a sample was dated with different isotopic systems, the “Sample Name” must be differentiated with a suffix that refers to each system (Figure 1). What is important is that in this column there are no repeated names, they can be similar, but not exactly the same. For example, the GHT sample has dates of U-Pb, Ar-Ar, and K-Ar. The ages of Ar-Ar included, the name of the sample should be called GHT\_Ar, those of K-Ar will be GHT\_K while for the ages of U-Pb, as it is the most recurrent dating system, it will not have a suffix.

Sample Name	Isotope System
GHT	U-Pb (radiogenic)
GHT_Ar	Ar-Ar
GHT_K	K-Ar

*Figure 1. Nomenclature example of samples dated with more than one dating method.*

For the other isotopic systems, the suffixes will be as show below:

Zircon Fission Track (ZFT); Apatite Fission Track (AFT); Rb-Sr (Rb); Re-Os (Re); U-Th / He (UThHe); U-Th / Pb (UThPb); Sm-Nd (Sm).

**Unit:**

Unit names must be entered in English and the first letter of each word must be capitalized. Some examples as in Figure 2.

El Picacho Metabasites
El Retiro Amphibolite
El Retiro Complex
El Rosario Complex
El Tambor Stock
Esmeraldas Fm.
Espinal Fm.
Farallones Granodiorite

*Figure 2. Examples of unit names in database.*

When the unit is a sedimentary Formation, the abbreviation that must be written is Fm. For example, Esmeraldas Formation will be written as Esmeraldas Fm. It is important that these conventions are adhered to, for the database consistency.

**Isotopic system**

When the applied method is U/Pb always choose the option “U-Pb (radiogenic)” among the drop-down options in this field. (Not to be confused with the “Approach” field).

**Interpretation:**

If the authors write a more specific or detailed interpretation of the reported ages that is not available in the drop-down options, write this additional information in the “Comment” field.

### Age and Age Units:

For U/Pb dating, generally the supplementary data of the articles includes a column called “Best age”, this is the one that will be used in the “Age” field of our Excel template (Figure 3). In the case that the authors have not included this column, the best age will be provided by applying the following criteria:

Age > 1000 Ma: 206Pb / 207Pb

Age < 1000 Ma: 206Pb / 238U.

On the other hand, the units must be Millions of Years (Ma).

**Decimals must be set to be POINTS instead of commas.**

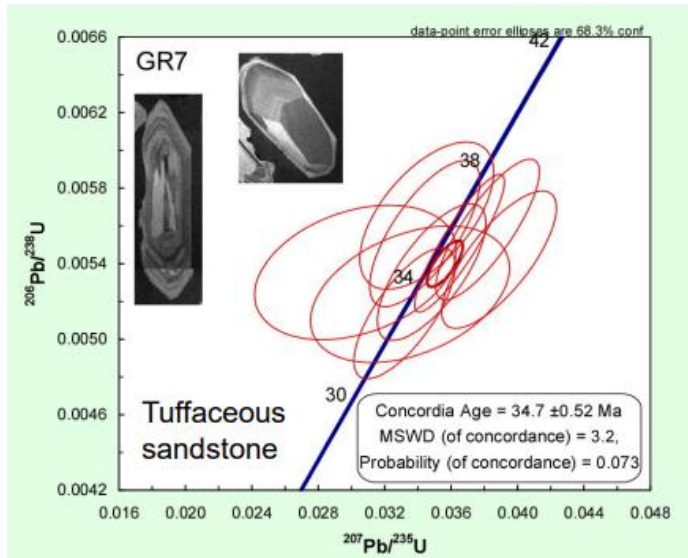
sample name	U ppm	Th/U	238U/206 Pb	1 sigma % error	207Pb/206Pb	1 sigma % error	206/238 age	1 sigma abs error	207/206 age	1 sigma abs error	Best age	1 sigma
SL-0057_1	209.67	0.61	23.28	0.0176	0.0510	0.0143	271.16	4.67	242.74	32.57	271.2	4.7
SL-0057_2	60.48	0.33	24.58	0.0218	0.0536	0.0247	257.06	5.48	354.55	54.87	257.1	5.5
SL-0057_3	1088.18	0.62	28.42	0.0165	0.0517	0.0104	222.91	3.62	271.45	23.77	222.9	3.6
SL-0057_4	1248.90	0.38	25.18	0.0165	0.0529	0.0097	251.06	4.07	324.90	21.88	251.1	4.1
SL-0057_5	438.92	1.06	24.46	0.0204	0.0549	0.0233	258.28	5.16	408.65	51.33	258.3	5.2
SL-0057_6	583.00	0.56	5.49	0.0170	0.0844	0.0087	1078.50	16.84	1301.70	16.81	1301.7	16.8
SL-0057_7	488.17	0.14	2.91	0.0165	0.1229	0.0085	1904.16	27.19	1998.87	15.08	1998.9	15.1
SL-0057_8	180.58	0.82	23.09	0.0193	0.0723	0.0208	273.28	5.17	995.14	41.71	273.3	5.2
SL-0057_9	362.16	0.57	19.56	0.0169	0.0521	0.0128	321.46	5.28	289.37	29.07	321.5	5.3
SL-0057_10	659.08	0.90	25.52	0.0166	0.0510	0.0114	247.79	4.04	242.05	26.10	247.8	4.0
SL-0057_11	213.88	0.38	7.52	0.0184	0.0727	0.0100	804.69	13.91	1005.00	20.11	1005.0	20.1
SL-0057_12	857.40	0.23	6.47	0.0166	0.0793	0.0086	926.30	14.29	1179.68	16.94	1179.7	16.9
SL-0057_13	276.56	0.60	3.89	0.0172	0.0961	0.0104	1474.10	22.63	1548.81	19.45	1548.8	19.4
SL-0057_14	168.09	1.39	24.21	0.0175	0.0828	0.0154	260.92	4.47	1265.03	29.87	260.9	4.5
SL-0057_15	334.78	0.81	9.89	0.0166	0.0606	0.0104	620.85	9.82	625.47	22.33	620.9	9.8
SL-0057_16	512.09	0.56	24.71	0.0170	0.0522	0.0121	255.75	4.26	295.89	27.44	255.7	4.3
SL-0057_17	46.85	0.94	5.02	0.0181	0.0800	0.0134	1170.80	19.36	1197.12	26.13	1197.1	26.1

**Figure 3.** Example on how to apply the criteria.

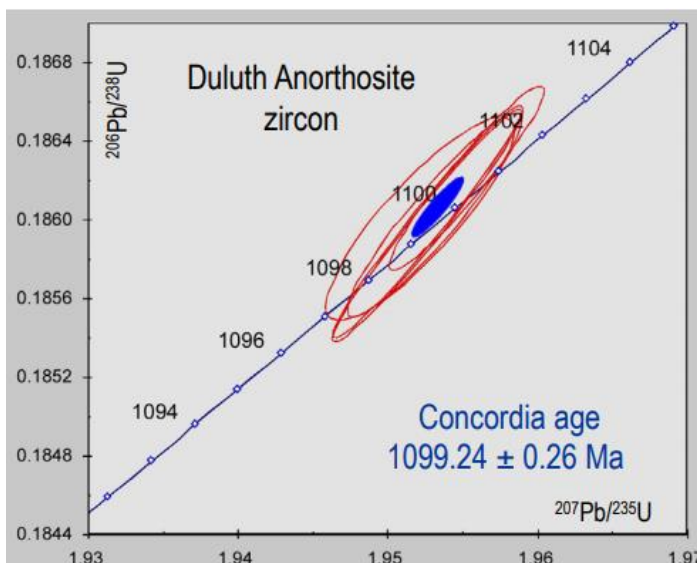
### Approach (for U/Pb ages)

In the compilation format, both the individual ages of the zircons dated (raw data generally found in the supplementary material of the articles) with the U / Pb system and their average ages (e.g., Concordia and “Weighted Mean” ages) and intercepts must be included when reported. We must be careful to set the correct Approach, especially in the case of individual U / Pb ages. In samples with detrital zircons, between 100 to 120 zircons (raw data) are usually dated with this system. In igneous rock samples it is common to date around 60 zircons. The "Approach" of these data must correspond to the "Best Age" isotopic system: 206Pb \* / 238U (<1000 Ma) or 207Pb \* / 206Pb \* (> 1000 Ma), you must select one of these two options in the drop-down menu of the field. Additionally, these results are usually represented in a concordia diagram in order to

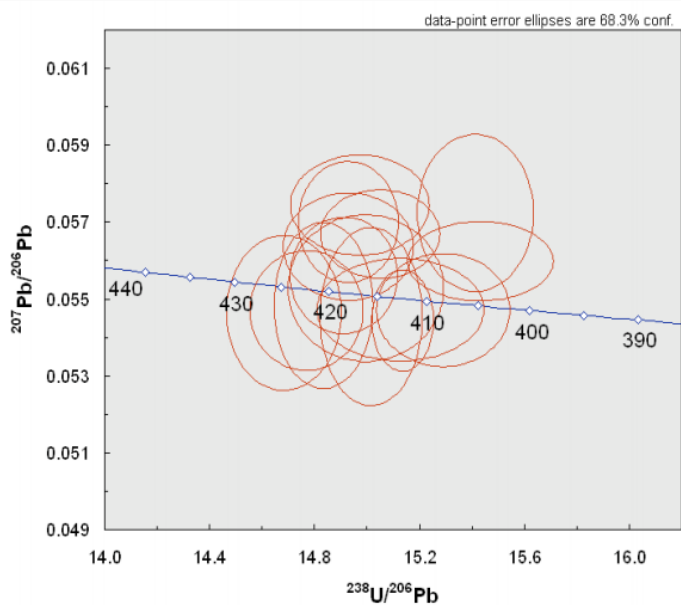
evaluate the internal consistency of the U-Pb data. In this diagram, each ellipse represents an analysis, and its size represents the experimental error. **Concordia ages** are obtained from analyses with low lead loss (see Figure 4 and 5). When there is some dispersion between all the ellipses (see Figure 6 and 7) and the lead loss in the grains are higher it is possible to do another type of weighted calculation, for which there is the option “Weighted Mean” in the drop-down menu.



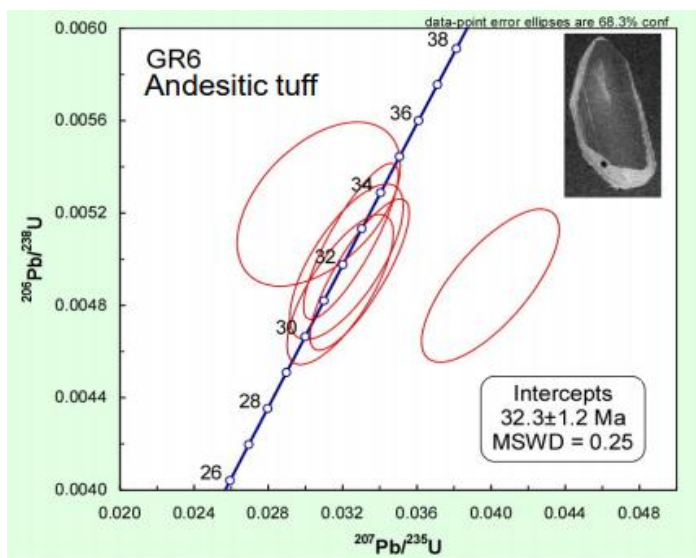
**Figure 4.** Concord diagram showing concordant age.



**Figure 5.** Concord diagram showing concordant age. Example from Paces and Miller, 1993.



**Figure 6.** Concordia diagram with scattered ellipses. Not concordant age.



**Figure 7.** Concordia diagram with scattered ellipses. Not concordant age.

For other methods such as Ar-Ar, K/Ar, U-Th / He and Fission tracks, only the average age should be considered and the individual grains ages will not be included in the database.

**Technique:**

In this space you must enter what type of technique was used to perform the dating: ICP Mass Spectrometry, SHRIMP, Fission Track, among others (see Excel sheet “Fields\_Info” in the compilation template).

**MSWD:**

This statistical parameter (Mean Square Weighted Deviation) is very important to consider it since it is related to the precision of the data and therefore how reliable they are. This parameter must be included for any calculated average age. In the "# samples

included" field enter the number of individual grains that were included for this calculation if the article provides that information.

### **Tectonic Domain:**

In general, one of the divisions of the country that was used in the database is by tectonic domains, which are delimited by the main fault systems in the Colombian territory. Correlating ages of crystallization, cooling and exhumation with particular observable tectonic events in these domains allows us to understand the geometry, geographical extension and the structure of the different accreted blocks that make up the Colombian territory: 1) Continental arc magmatism 2) Intra-oceanic arc magmatism 3) Intra-cratonic magmatism, 4) Anatexis (continent break-up by continental rifting), 5) Continent assemblage: Collision of two tectonic plates and formation of long-lived accretionary orogens (Granulitic and migmatitic metamorphic belts), 6) Collision of terranes of exotic crust as seamounts, intra-oceanic arcs and oceanic plateaus (eg. CLIP or Caribbean plateau), which collide with the margin and triggers basin inversion by the reactivation of graben structures.

As for 2021, the tectonic domains included in the database are shown in Figure 8.

- Amaga basin
- Arquia Complex
- Cajamarca Complex
- Cauca-Patia basin
- Central Cordillera
- Cesar-Rancheria basin
- Choco-Panama block
- Eastern Cordillera
- Floresta Massif
  
- Garzon Massif
- Gorgona Island
- Guajira
- Guiana Shield
- La Macarena Massif
- Las Minas Massif
- Llanos basin
- Lower Magdalena Valley basin
- Maracaibo basin
  
- Middle Magdalena Valley basin
- Perija
- Putumayo basin basement
- Quebradagrande Complex
- Quetame Massif
- San Jacinto deformed belt
- Santander Massif
- Sinu deformed belt
- SNSM

*Figure 8. Tectonic domains in the database.*

- Tumaco basin
- Upper Magdalena Valley basin
- Western Cordillera

### **Latitude, Longitude and Elevation:**

The coordinates must be in Decimal Degrees (Latitude, Longitude, e.g., 7.0554N; -78.6587W). In the seedbed's drive there is an Excel file that allows converting coordinates from Degrees, Minutes and Seconds (GMS) to GD. Sometimes the authors present a table of the coordinates of each sample. If this is the case, please verify that these coincide with the location on the map of the article (this can be done in Google Earth), this will also help you learn about the geographical location of the units, their regional extension in the territory. There are cases in which they do not coincide, and the coordinates are taken from the georeferencing of the map. Here is a link to learn how to georeference in the QGIS software: <https://www.youtube.com/watch?v=9MjYFgFXIy0&t=220s>. If the samples do not present coordinates, then the rest of the information is compiled, and the article is blacklisted. When this is the case, they should record it on the "list of references" sheet.

Information on the height at which the samples were collected is not always available. In case they do report them, the units are in meters (they could get an estimate from Google Earth).

### **Comment:**

Additional information (in English) from some other column is entered in this field. For example, if there are no very specific lithologies in the detachable options of the Lithology field. This can go in comments. If the sample is an "Augen gneiss" then this can be specified in the comment. Also, if there are more details in the technique used or in interpretation, etc.

### **Lab ID:**

In this box it is put in which university / laboratory the analyzes were made. For example: Colombian Geological Survey or University of Sao Pablo (the name of the place must always be in English).

### **Full reference:**

The bibliography of the article should be placed in APA citation.

### **Year published:**

The year the article was published.

### **General recommendation:**

The idea is to compile all the information that the article reports to improve the quality of the compilation. Do not forget that in the coordinates the decimals must be with points and not with commas if we leave it in commas ArcGIS or QGIS cannot read them to make maps.

Do not forget that all the fields are in ENGLISH.