Cave Bear Activity 1

Answer these three questions (on your board) based on information in the results section:

1. They argue that they can identify differences in water resources used by the bears. What isotopic measurement can they take in the **ancient bears** that will reflect the water resource the bears were using?
2. They argue that they can use the δ18Ovalues basedon the carbonate fraction and don’t need to use the δ18OPO4 Why are the carbonate values good enough?
3. They say “no significant correlation was found between the isotopic values and any diagenetic indicator.” **What are the diagenetic indicators they were looking for?**

**Glossary**:

**Diagenesis**: "*the cumulative physical, chemical and biological environment; these processes will modify an organic object’s original chemical and/or structural properties and will govern its ultimate fate, in terms of preservation or destruction*" (Wilson and Pollard, 2002)

Bocherens, Hervé, et al. "Niche partitioning between two sympatric genetically distinct cave bears (*Ursus spelaeus* and *Ursus ingressus*) and brown bear (*Ursus arctos*) from Austria: Isotopic evidence from fossil bones." *Quaternary International* 245.2 (2011): 238-248.