I am picking on Band Depth before turning my attention to the more complex spectral indicators.  
  
The problem with Band Depth is that:

1. Some minerals may naturally have more pronounced absorption than others, leading to higher BD values, our objective is to detect all minerals, not just the ones with the most pronounced signature.
2. Band depth calculations is highly sensitive to the continuum.
3. Not all the indicators are straight band depth, some indicators check multiple band depths in the one calculation, others use a minimum value, others are a mixture of many band depths, all of this may introduce a scaling bias.
4. Band depth data is truncated, there shouldn’t be negative values.
   1. This is a problem for Z-score standardisation as the data is truncated.

Ideas:

* We have reference data as to what the Band Depth should be for minerals. Perhaps we scale each band depth by reference to lab data?

**Continuum problem explained:**

The choice of reference points for continuum fitting significantly impacts the calculated band depth. Different selections for the same absorption feature can lead to varying band depth values, even when analyzing the exact same absorption. This introduces a problem: the strength of a band depth value is not solely determined by the material's absorption characteristics but is also influenced by the arbitrary selection of continuum points, making direct comparisons across different features unreliable.

