**OBSERVATIONS:**

* No ColorMode attribute: coloring done by custom while *ignoring* alpha values (i.e., ignoring transparency settings)
* ColorMode="12289": coloring by field values while *ignoring* alpha values (i.e., ignoring transparency settings)
* ColorMode="4097": coloring by field values while *observing* alpha values (i.e., using transparency settings)

Maybe I could have text letting the user know that customizing the box color requires “sacrificing” the last species in each .mtd file (not necessarily the last species in the list) to be the box color definition, as well as asking if they want that species shown anyway. If they say no to the second question, the display mode will be set to Empty for the last species in the file; if they say yes, it will be the same as the other species (as determined by the radio buttons in the boxsettings menu). The checkbutton option to show the species anyway will be grayed out if the customize box color option isn’t selected.

The reason for this is that the box color is somewhat nuanced. It is decided by the last FloatField in the .mtd file

**Field settings**

The following settings are to be made in the FloatField elements.

* **To mark all species invisible:** Visible="0" attribute in
* **To hide field particles:** DisplayStyle="Empty"
  + **ColorMode doesn't make a difference here, so just use:** ColorMode="12289"
* **To display field particles as dots:** DisplayStyle="Dots"
  + **To color by field values:** ColorMode="12289"
  + **To color by custom:** no ColorMode attribute
  + **To customize dot size:** modify DotSize attribute
    - DotSize="1" is the minimum
    - DotSize="9" is the maximum
  + **To customize dot quality:** modify DotQuality attribute
    - DotQuality="1" corresponds to Lowest
    - DotQuality="2" corresponds to Low
    - DotQuality="4" corresponds to Medium
    - DotQuality="6" corresponds to High
    - DotQuality="8" corresponds to Highest
* **To display field particles as volume:** DisplayStyle="Volume"
  + **To color by field values with transparency:** ColorMode="4097"
    - alpha=255 corresponds to 0% transparency
    - alpha=191 corresponds to 25% transparency
    - alpha=127 corresponds to 50% transparency
    - alpha=64 corresponds to 75% transparency
    - alpha=0 corresponds to 100% transparency
  + **To color by custom:** no ColorMode attribute
    - Coloring by custom will ignore transparency values
    - **Changing the transparency in ColorBARS should set fieldcolormode to “Field values”**
  + **To customize volume quality:** modify VolumeQuality attribute
    - VolumeQuality="25" corresponds to Lowest
    - VolumeQuality="50" corresponds to Low
    - VolumeQuality="100" corresponds to Medium
    - VolumeQuality="200" corresponds to High
    - VolumeQuality="400" corresponds to Highest