Subject: Re: FRS Calibration Issue
Posted by mlcortes on Thu, 24 Jul 2014 13:19:31 GMT
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Hi Scott,

Usually the FRS calibrations are done with primary beam runs. This is because only for that case you can be sure that you have mainly particles with the same Z entering the MUSICS (not taking into account charged states). Also, this primary beam settings have a smaller velocity spread and are more accurate the make the tof calibration. The runs are the same runs that are used to calibrate the effective matter of the FRS.
So, energy loss of charged particles depends on the charge and on the velocity. If you have the same beam (and then the same Z) with 3 different velocities you can use the energy loss in the musics (that now depends only on the velocity) to find a function (only of beta) for the energy loss (where you should see that for increasing velocity energy loss decreases) and then calculate Z as

Z= Z0sqrt(DEltaE/f(beta))

Here Z0 is the atomic number of the beam you used to calibrate. f(beta) is the cuadratic function that you fit to the plot of DeltaE vs beta. This is the way the code finds Z. I think that as you are mixing files with different values of Z the function that you fit does not depend only on beta and that is why you dont have a proper calibration.
I suggest to use the calibration files and check again. Let me know if you have any problem.