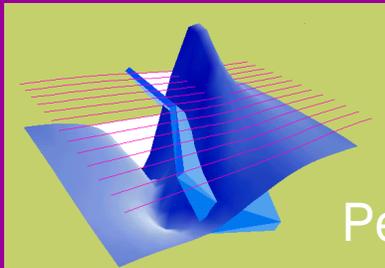
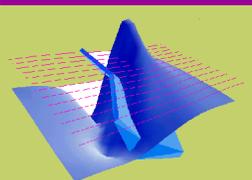


UXO Applications for Geophysics

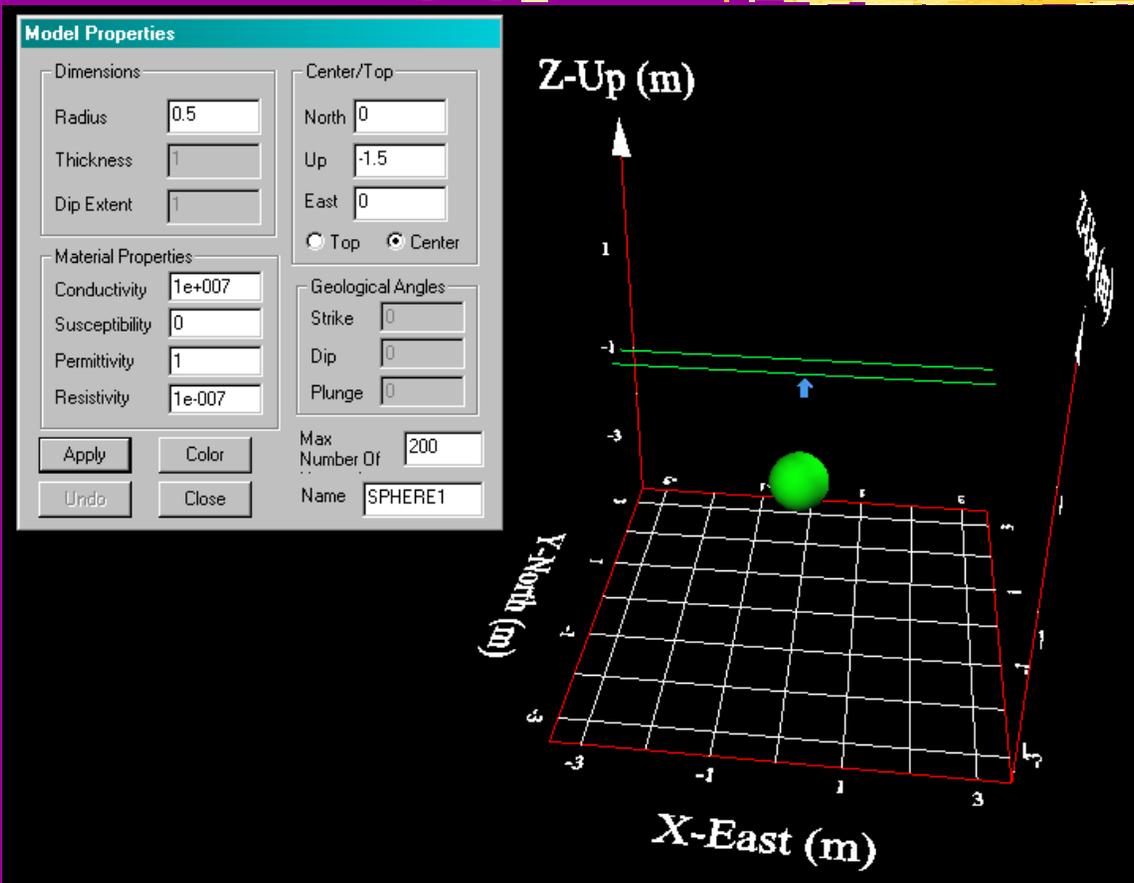
TEM modelling for UXO's using EMSPHERE



PetRos EiKon



Introduction



The model is a sphere in a uniform half-space. The solution technique is based upon Debye's formulation (1919). However, the key to the accuracy for this algorithm is the use of up to 200 accurate spherical harmonics.

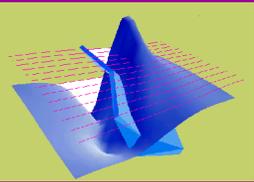
For the initial suite of models, a sphere of radius .5m is placed so that its centre is at a depth of 1.5m. The conductivity of the sphere is $1e7$ S/m.

Profile 1 over centre of sphere. Profile 2 is .5m to the North.

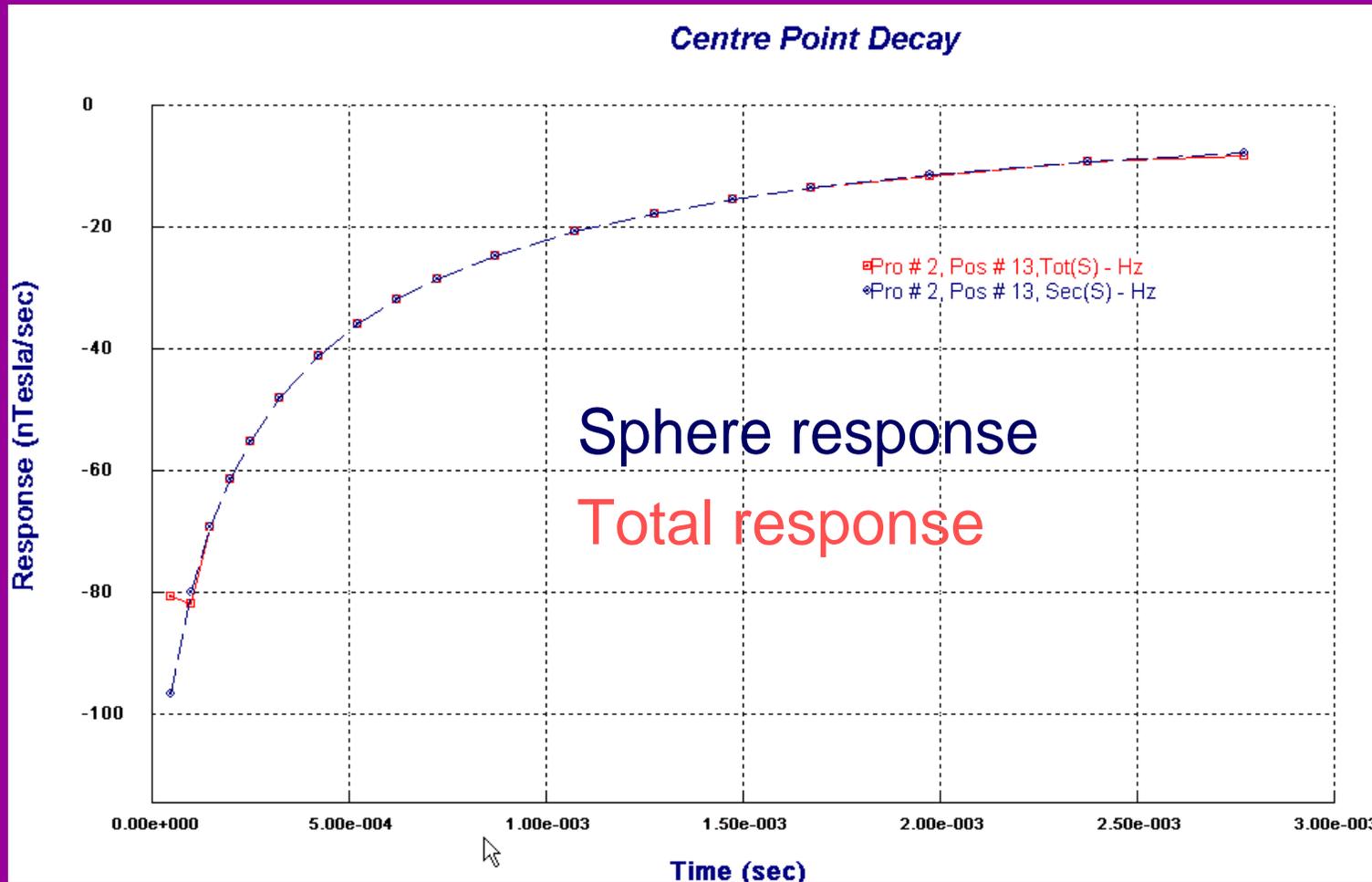
For these models, T_x and R_x are $1m^2$. T_x is 1mm above the ground and R_x is 1cm above the ground.

5/2/2002

Periodic waveform of 75Hz. Exponential rise with linear ramp followed by current off. T_x slightly off-centre

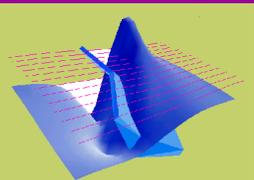


Decay – RX(0,0) – 18Channels Freespace background

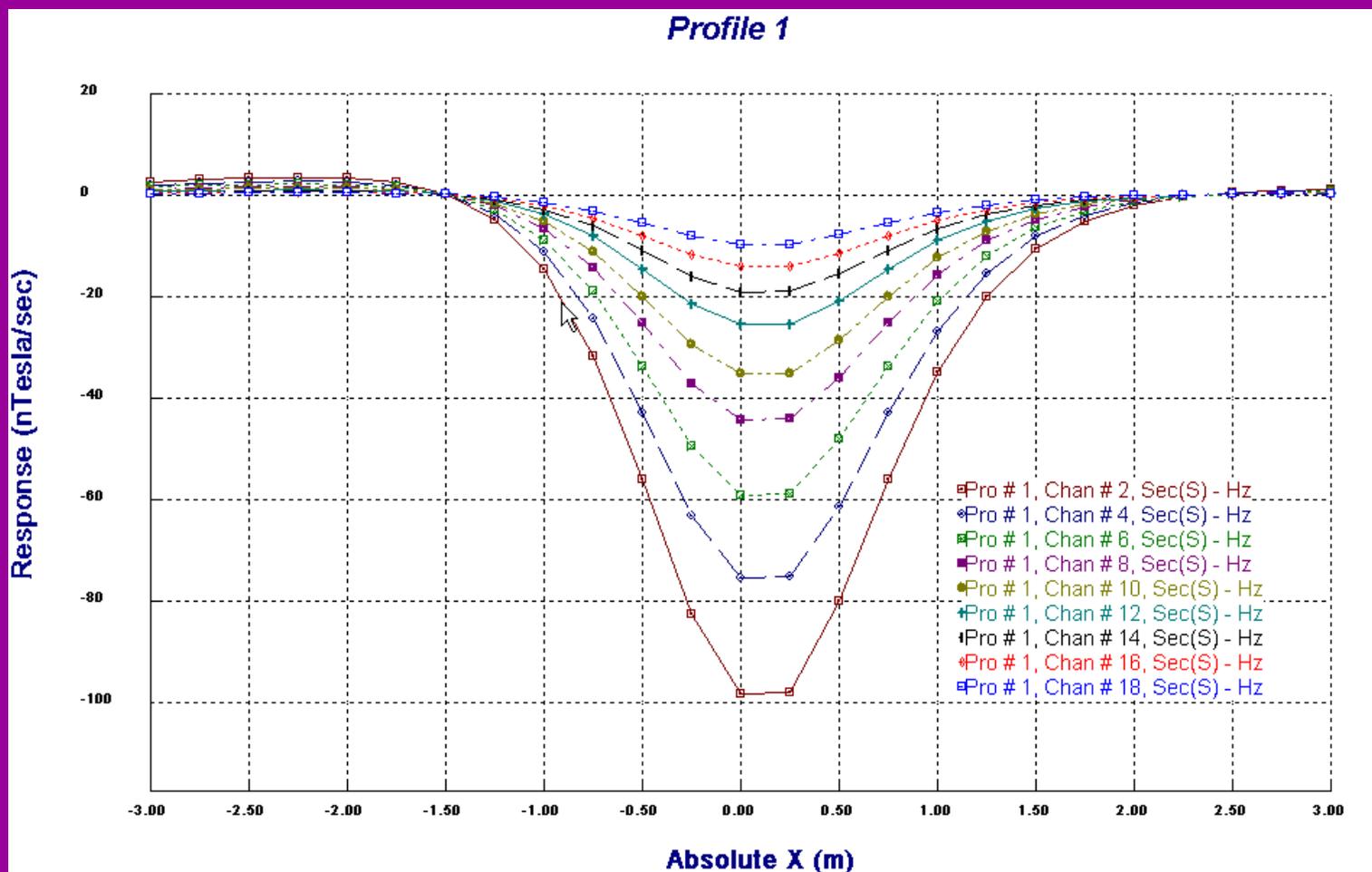


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$$\text{nT/sec} = \text{nV/m}^2$$

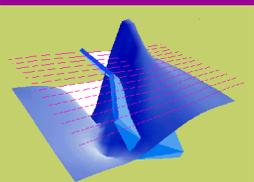


Profile 1 Response

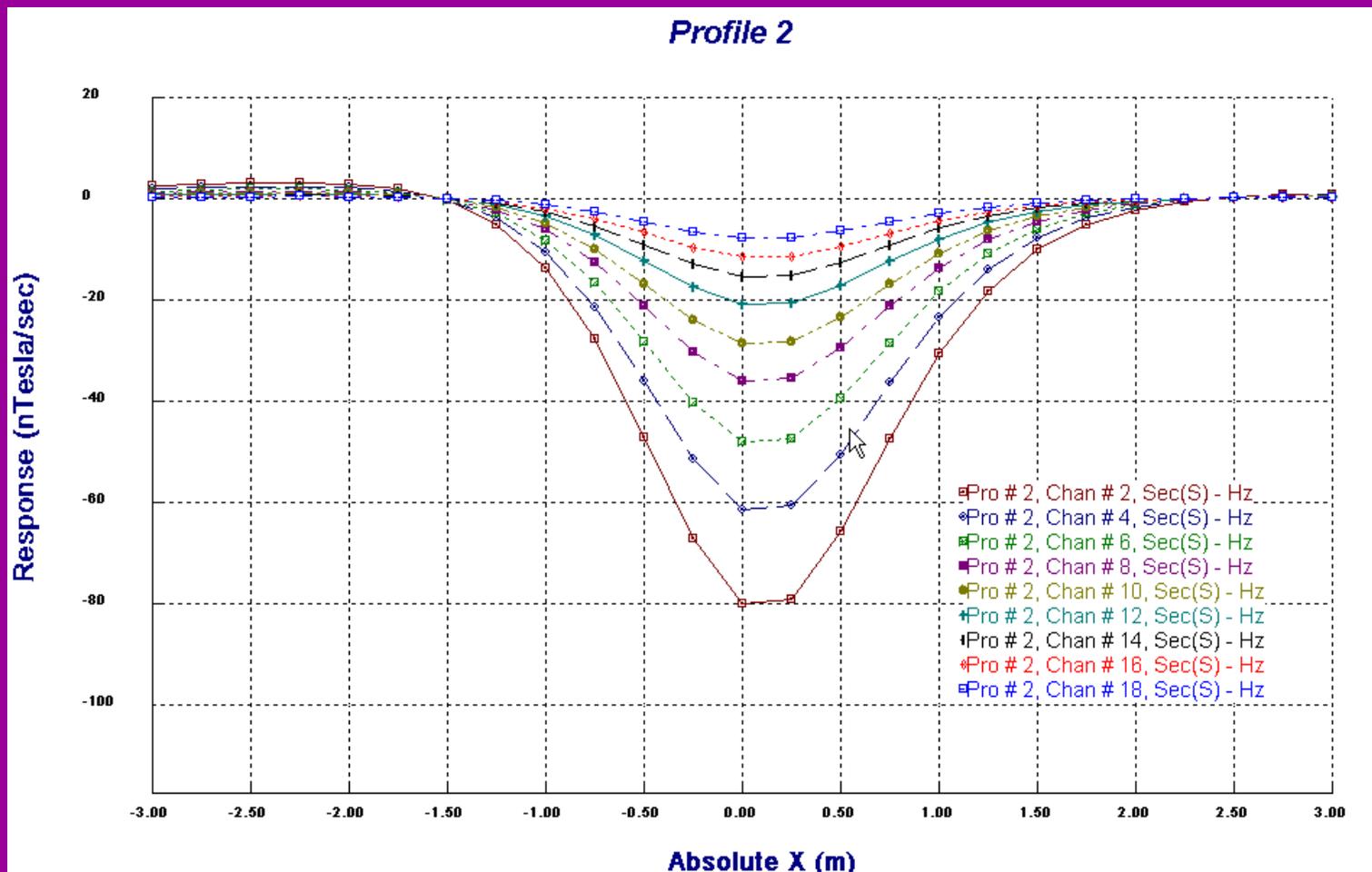


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Host - 1e9  m

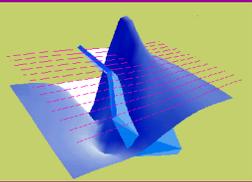


Profile 2 Response

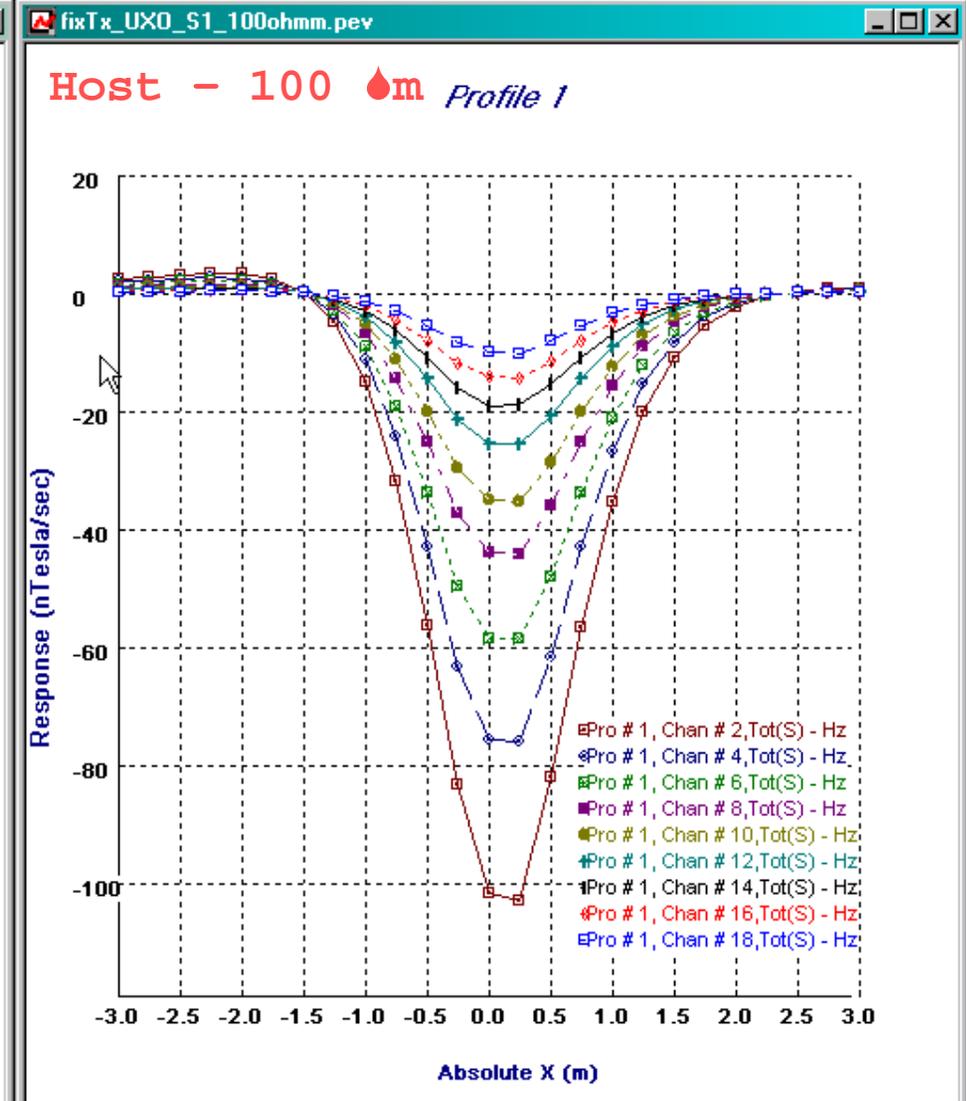
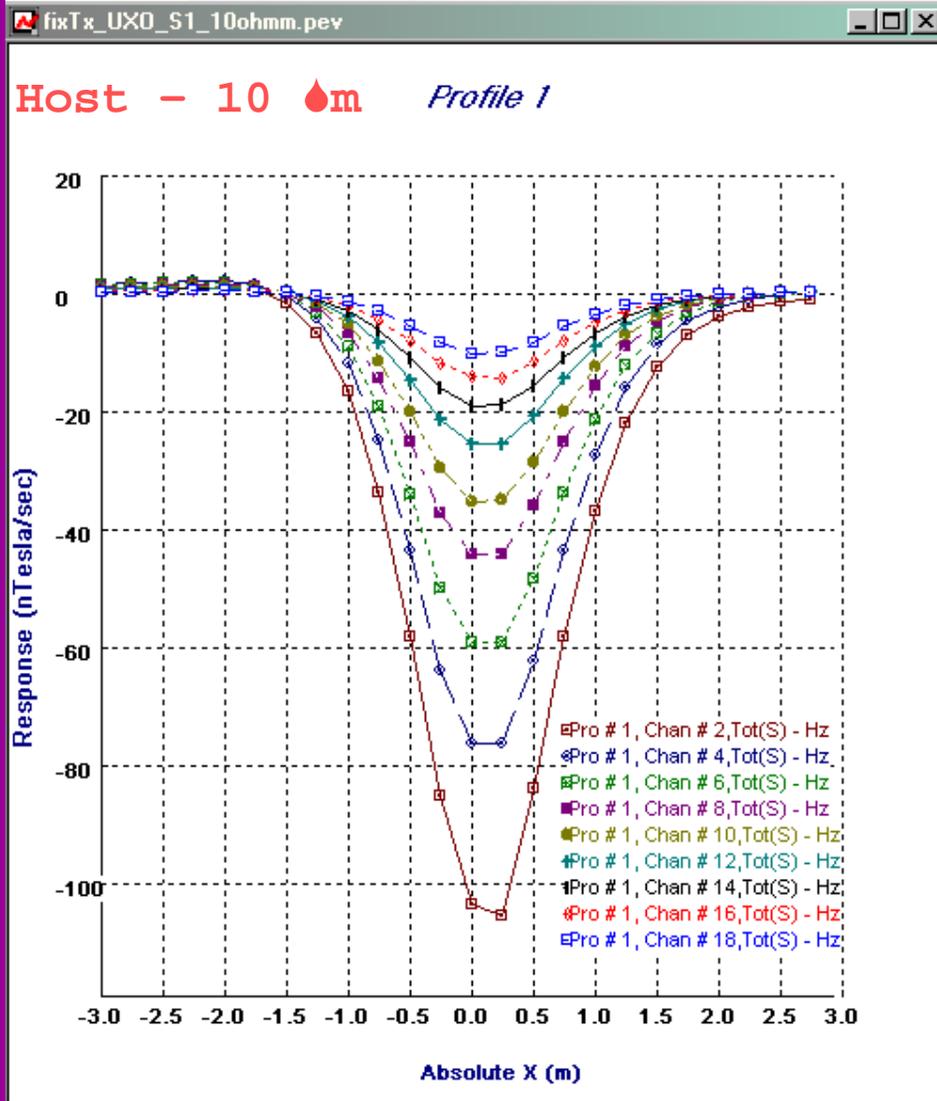


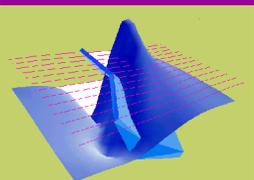
5/2/2002

Host - 1e9 m

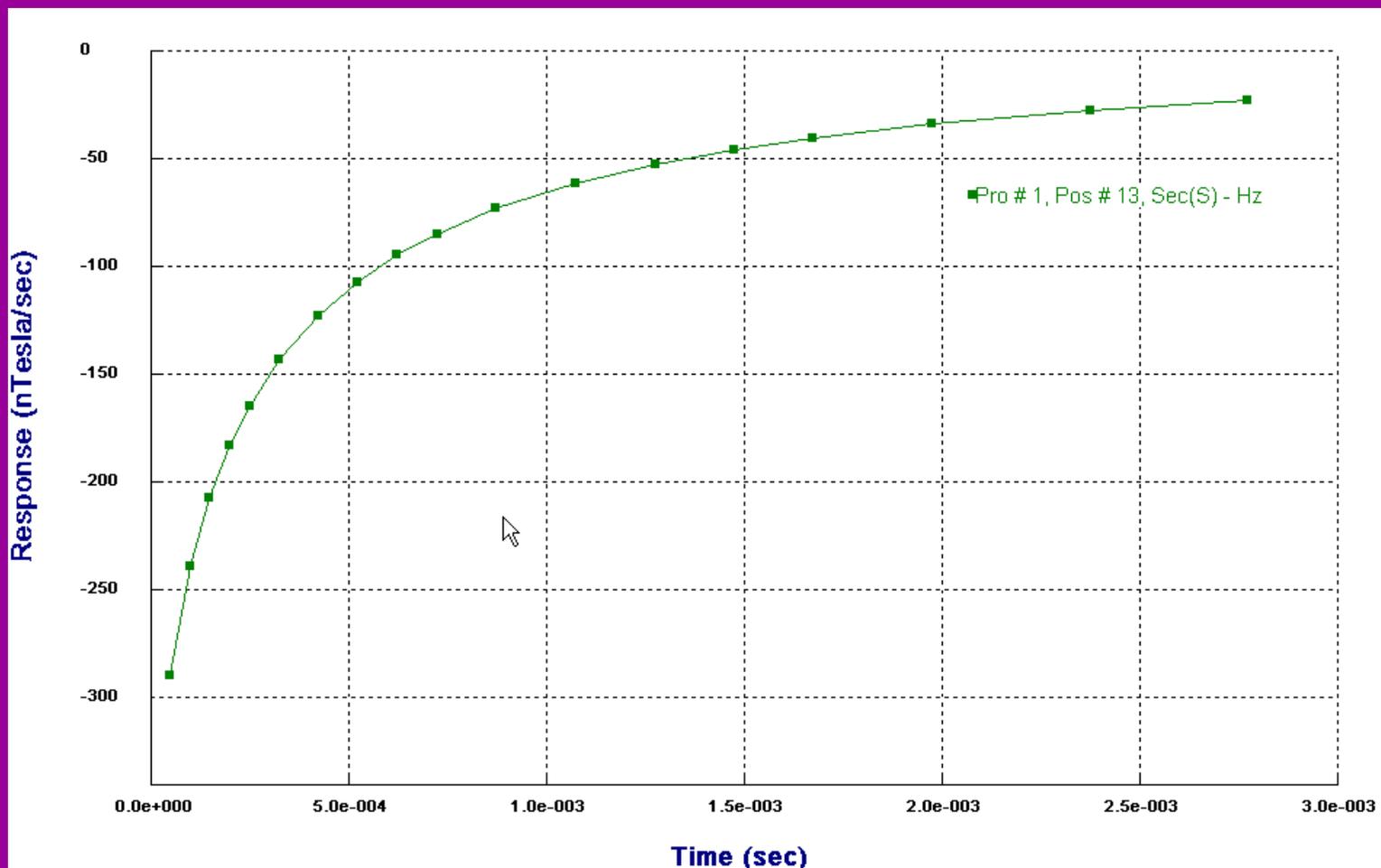


conducting backgrounds

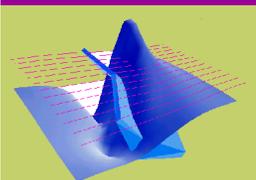




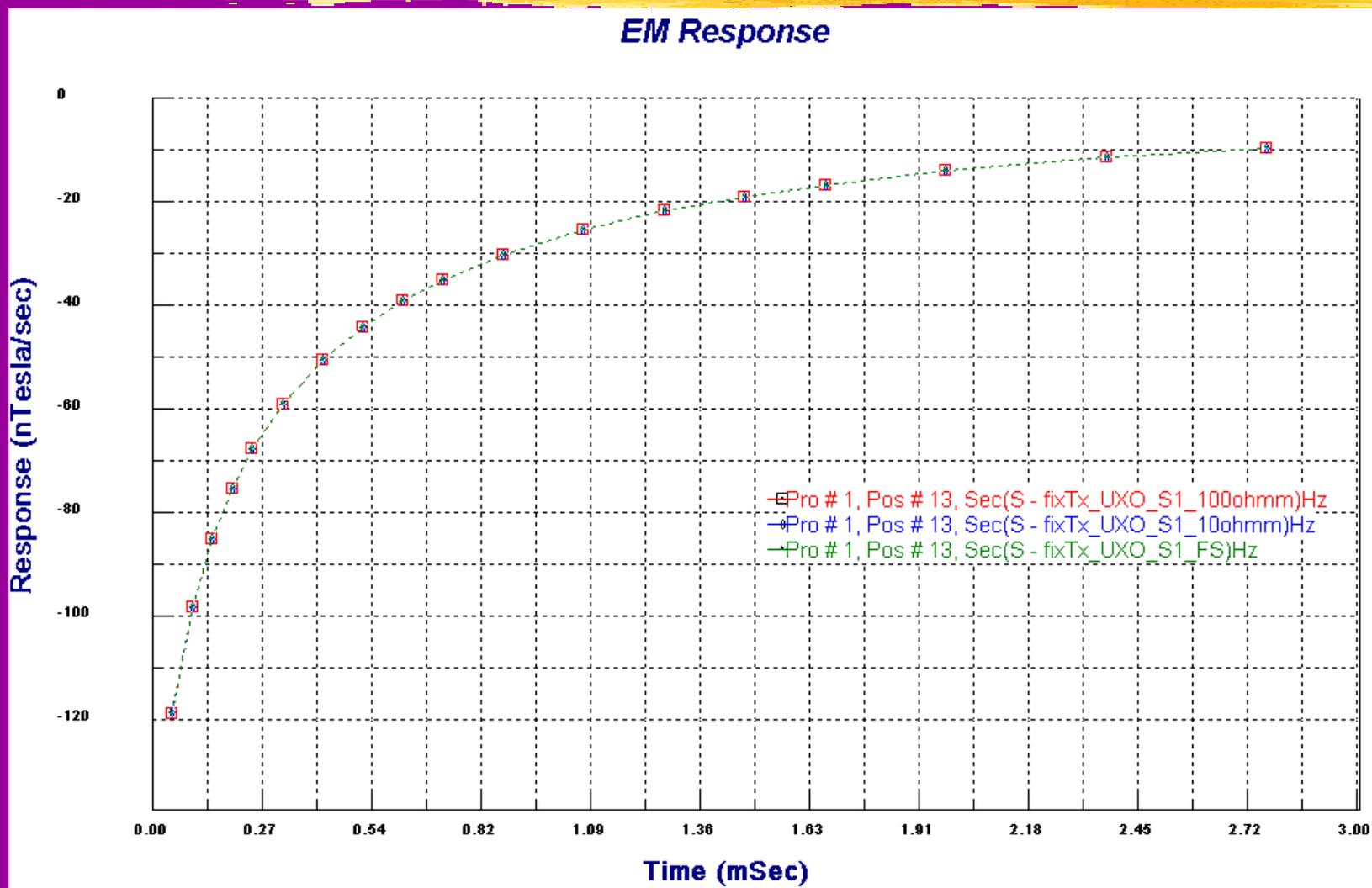
Magnetic Sphere

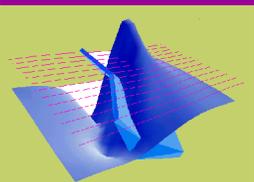


5/2/2002 Decay at (0,0) – Susceptibility 5 (SI units)



Decay Comparisons – non-mag





Decay Comparisons – all

