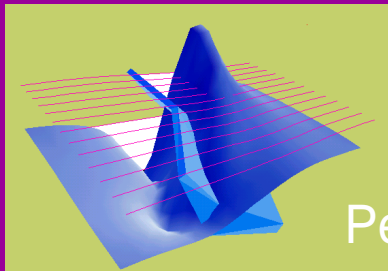
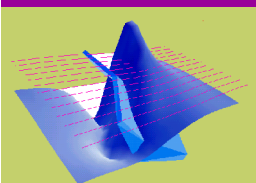


UXO Applications for Geophysics

TEM modelling for UXO's using EMSPHERE



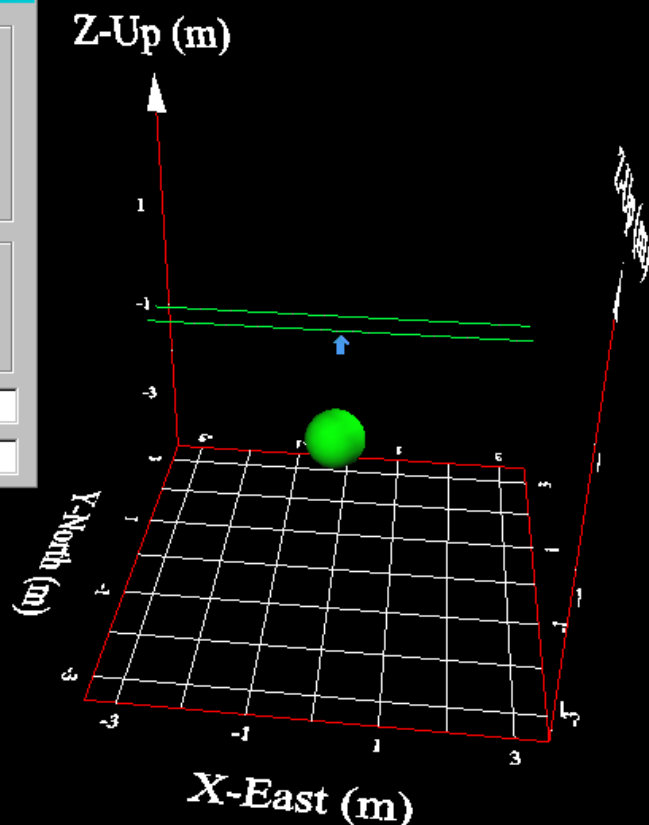
PetRos EiKon



Introduction

Model Properties

Dimensions		Center/Top	
Radius	0.5	North	0
Thickness	1	Up	-1.5
Dip Extent	1	East	0
		<input type="radio"/> Top	<input checked="" type="radio"/> Center
Material Properties			
Conductivity	1e+007	Geological Angles	
Susceptibility	0	Strike	0
Permittivity	1	Dip	0
Resistivity	1e-007	Plunge	0
Apply	Color	Max Number Of	200
Undo	Close	Name	SPHERE1



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.

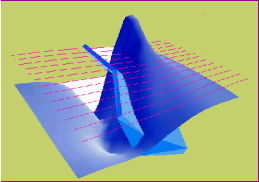
For the initial suite of models, a sphere of radius .5m is placed so that its centre is at a depth of 1.5m. The conductivity of the sphere is $1e7$ S/m.

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

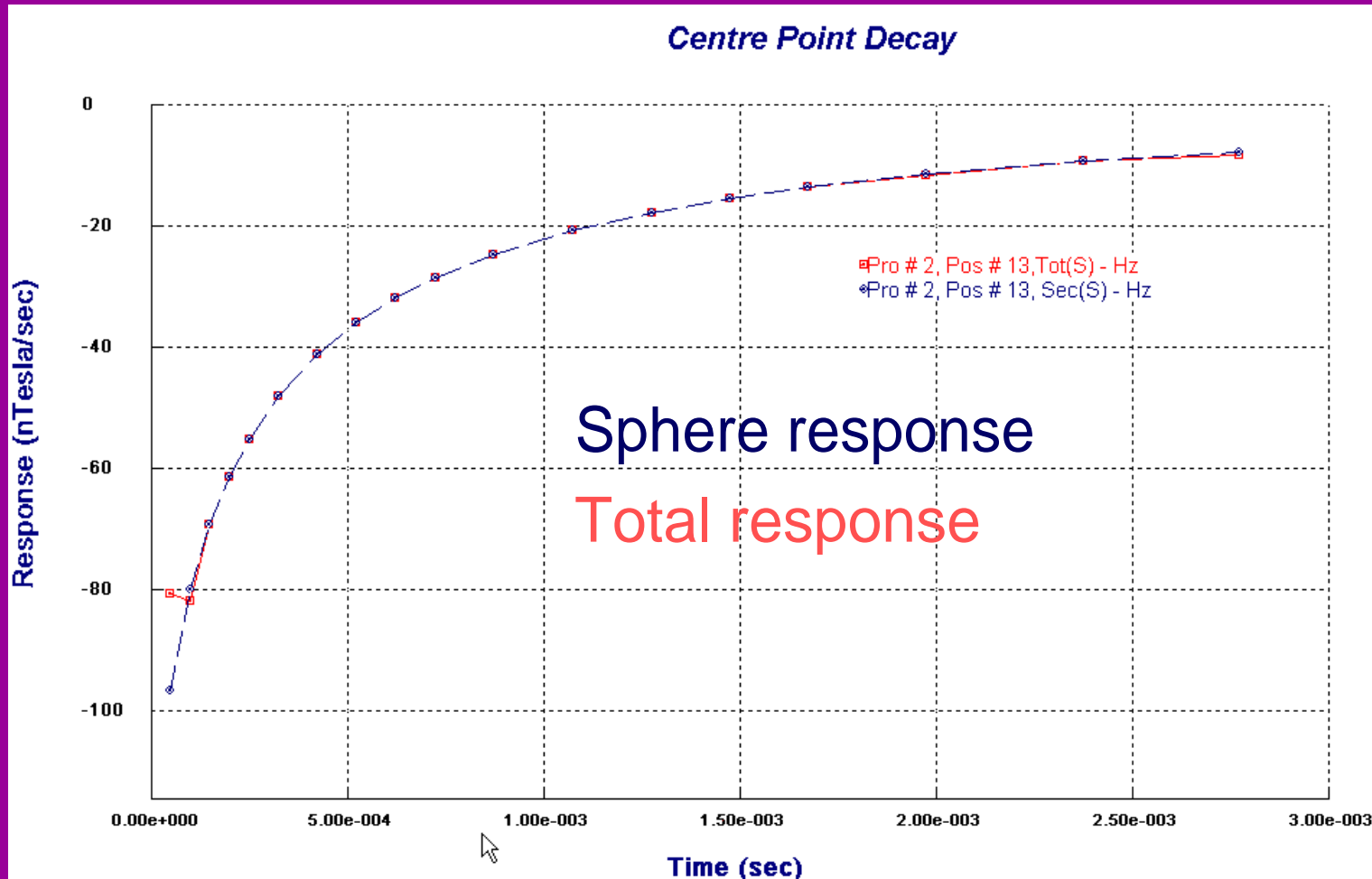
For these models, T_x and R_x are $1m^2$. T_x is 1mm above the ground and R_x is 1cm above the ground.

5/2/2002

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

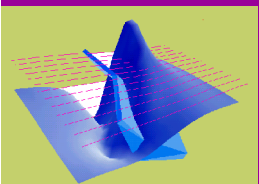


Decay – RX(0,0) – 18Channels Freespace background

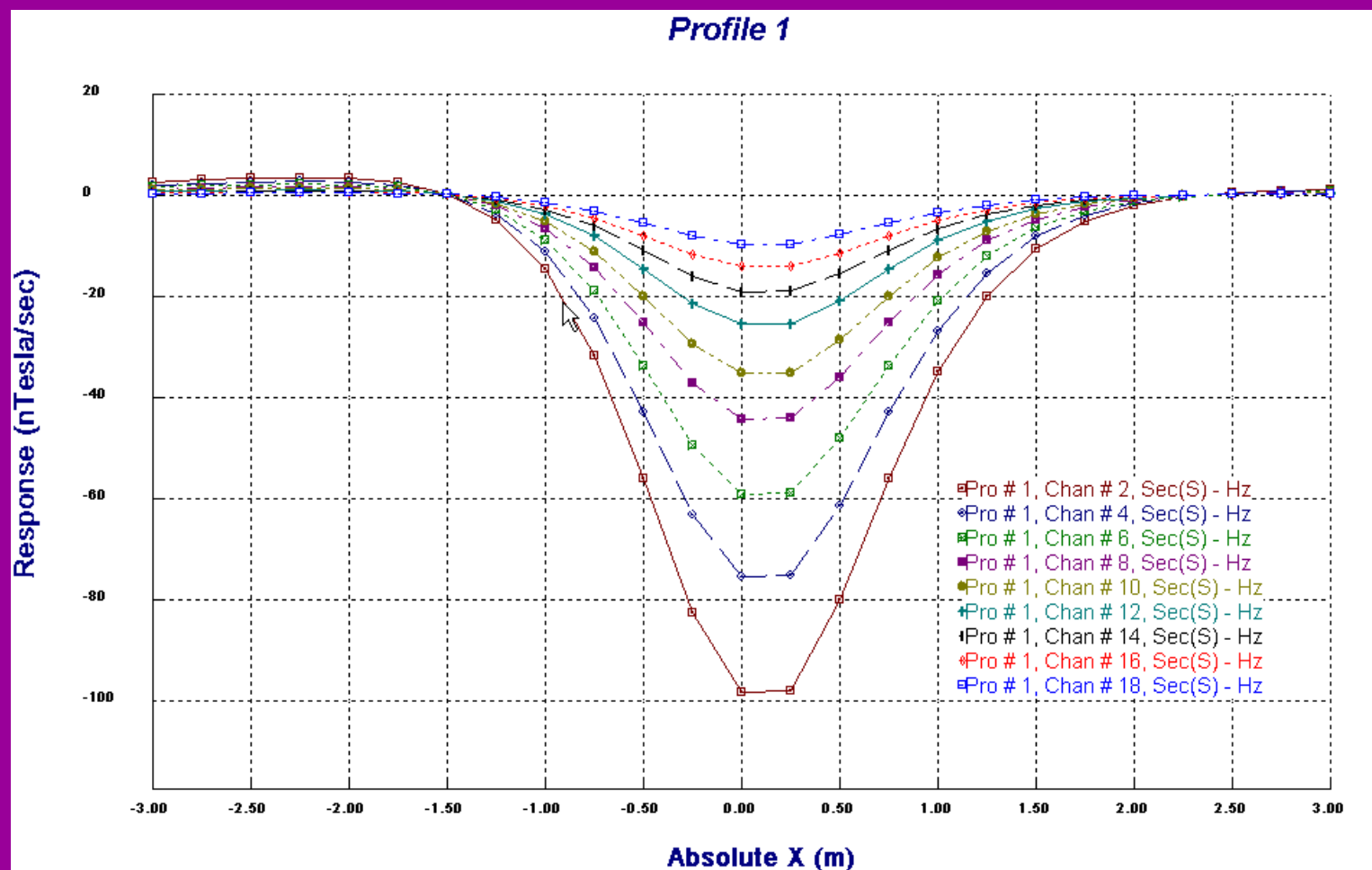


5/2/2002

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

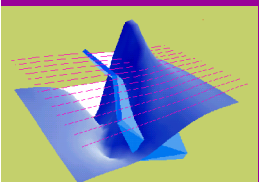


Profile 1 Response

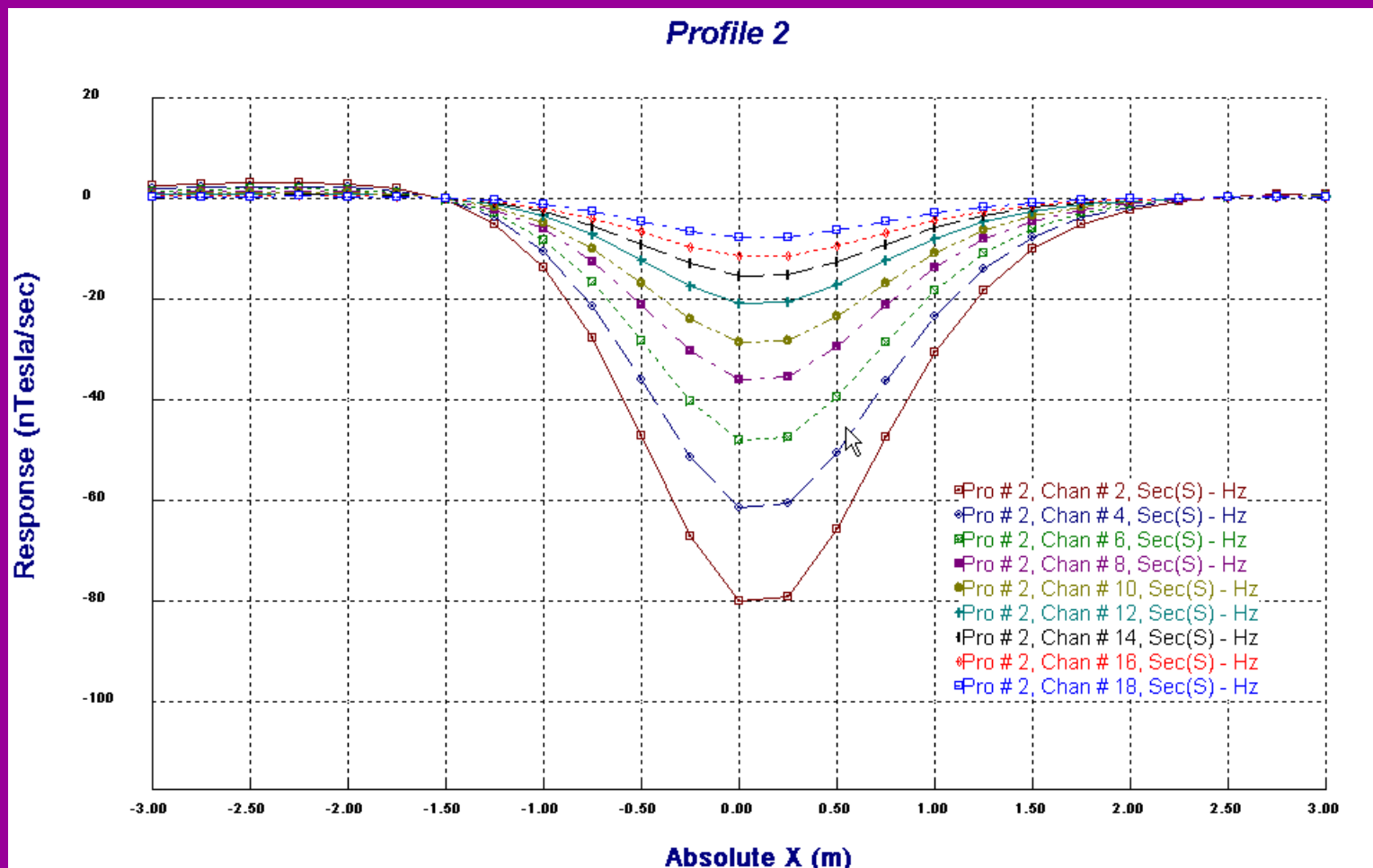


5/2/2002

Host - 1e9  m

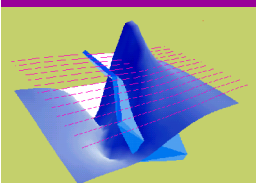


Profile 2 Response



5/2/2002

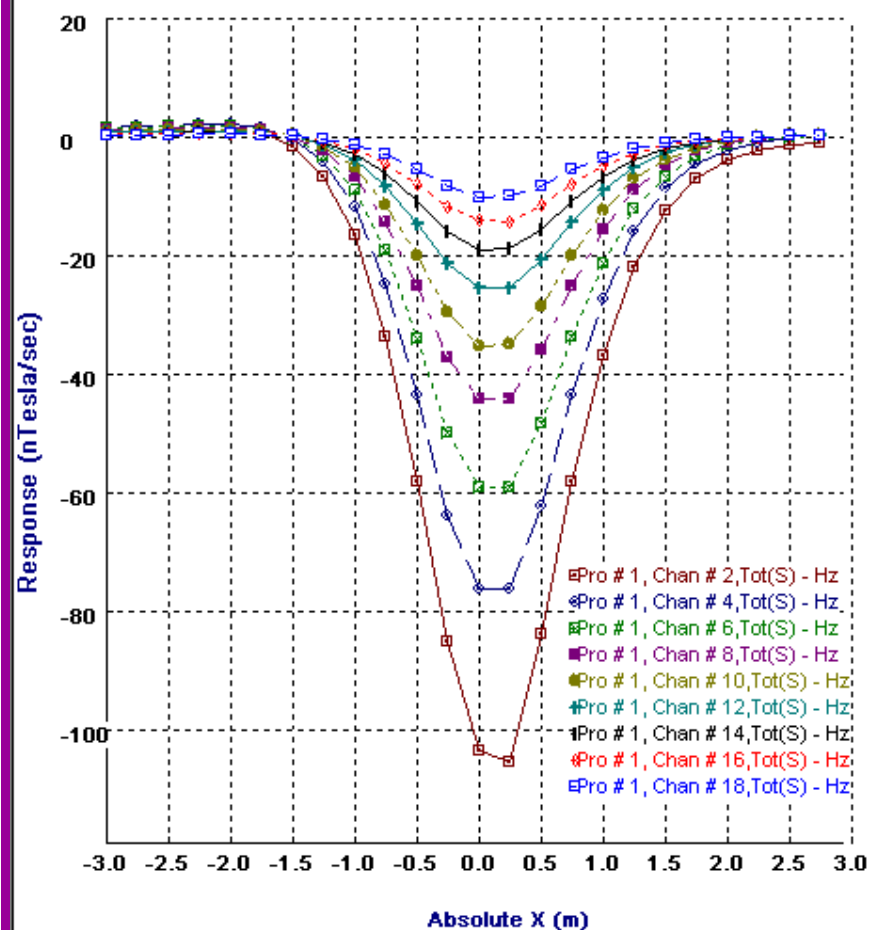
Host - 1e9  m



conducting backgrounds

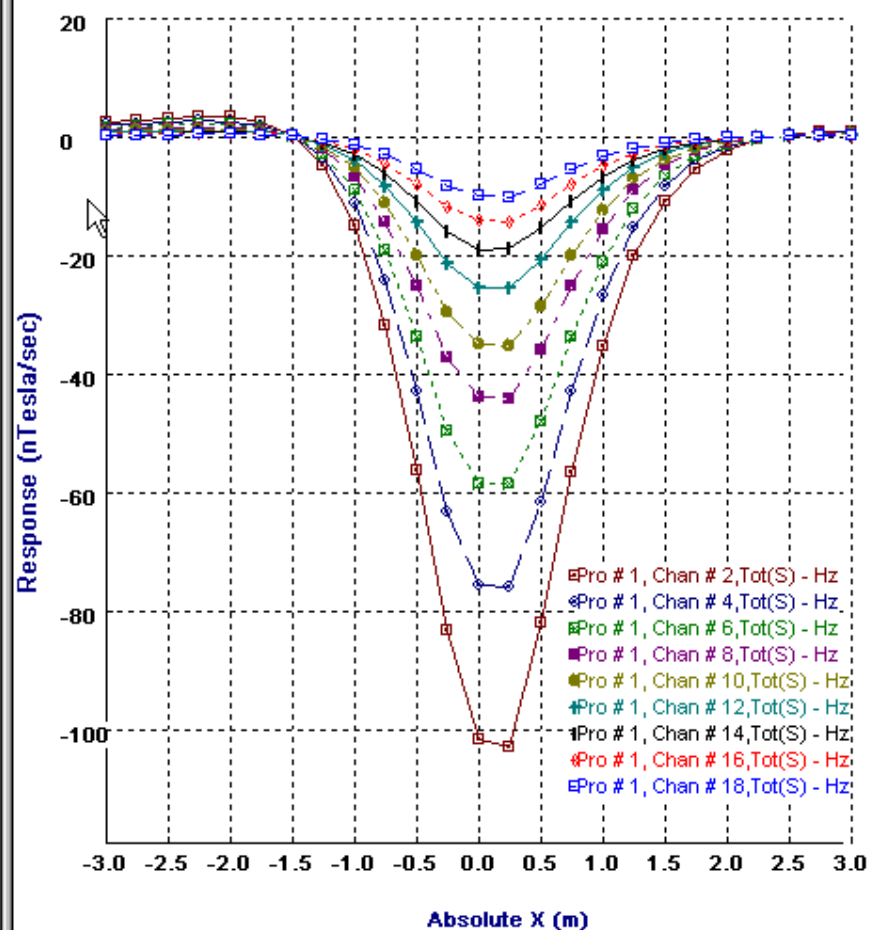
fixTx_UXO_S1_10ohmm.pev

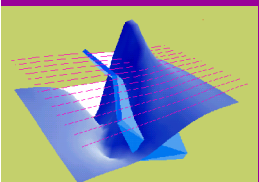
Host - 10 m Profile 1



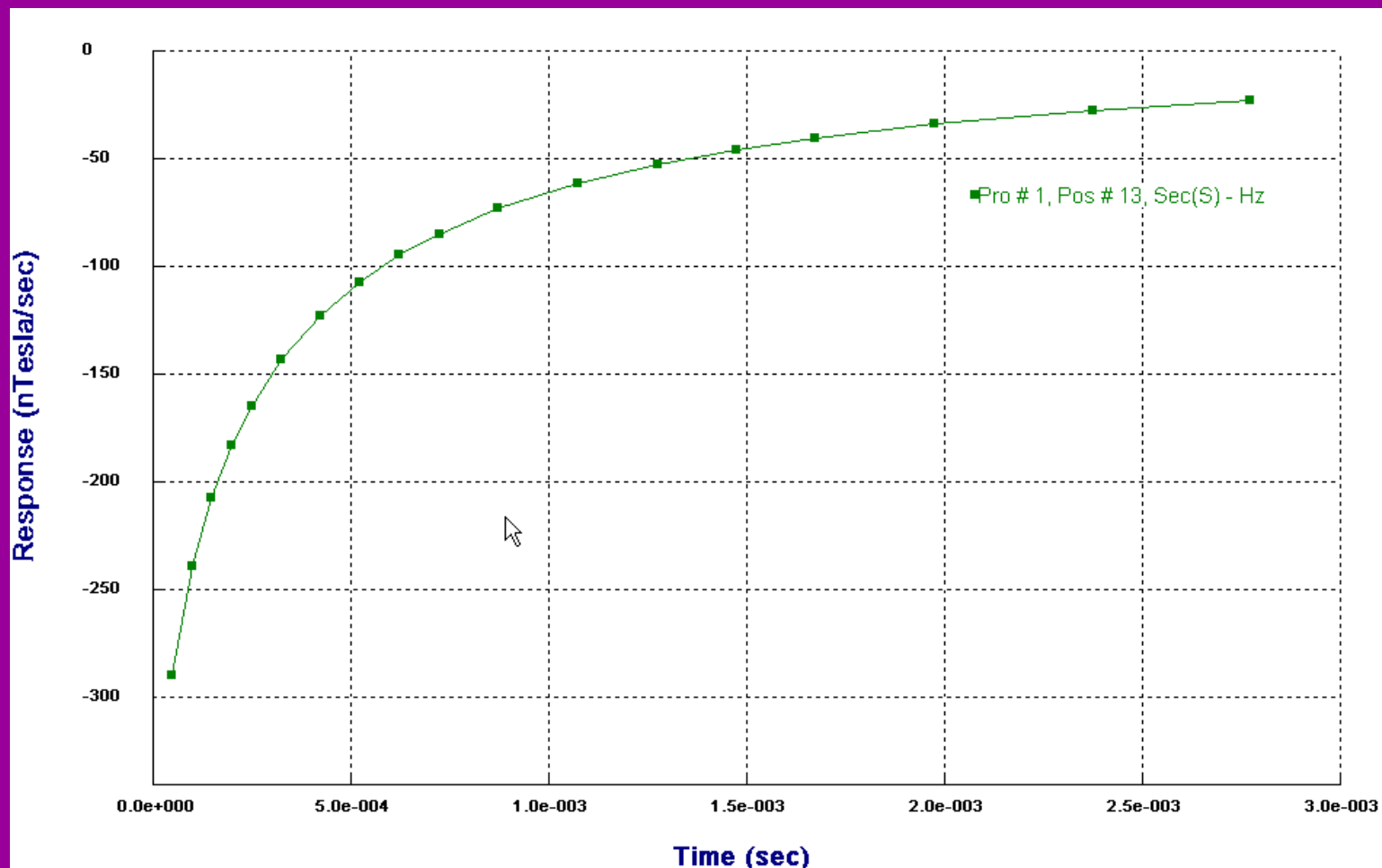
fixTx_UXO_S1_100ohmm.pev

Host - 100 m Profile 1

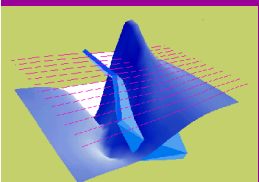




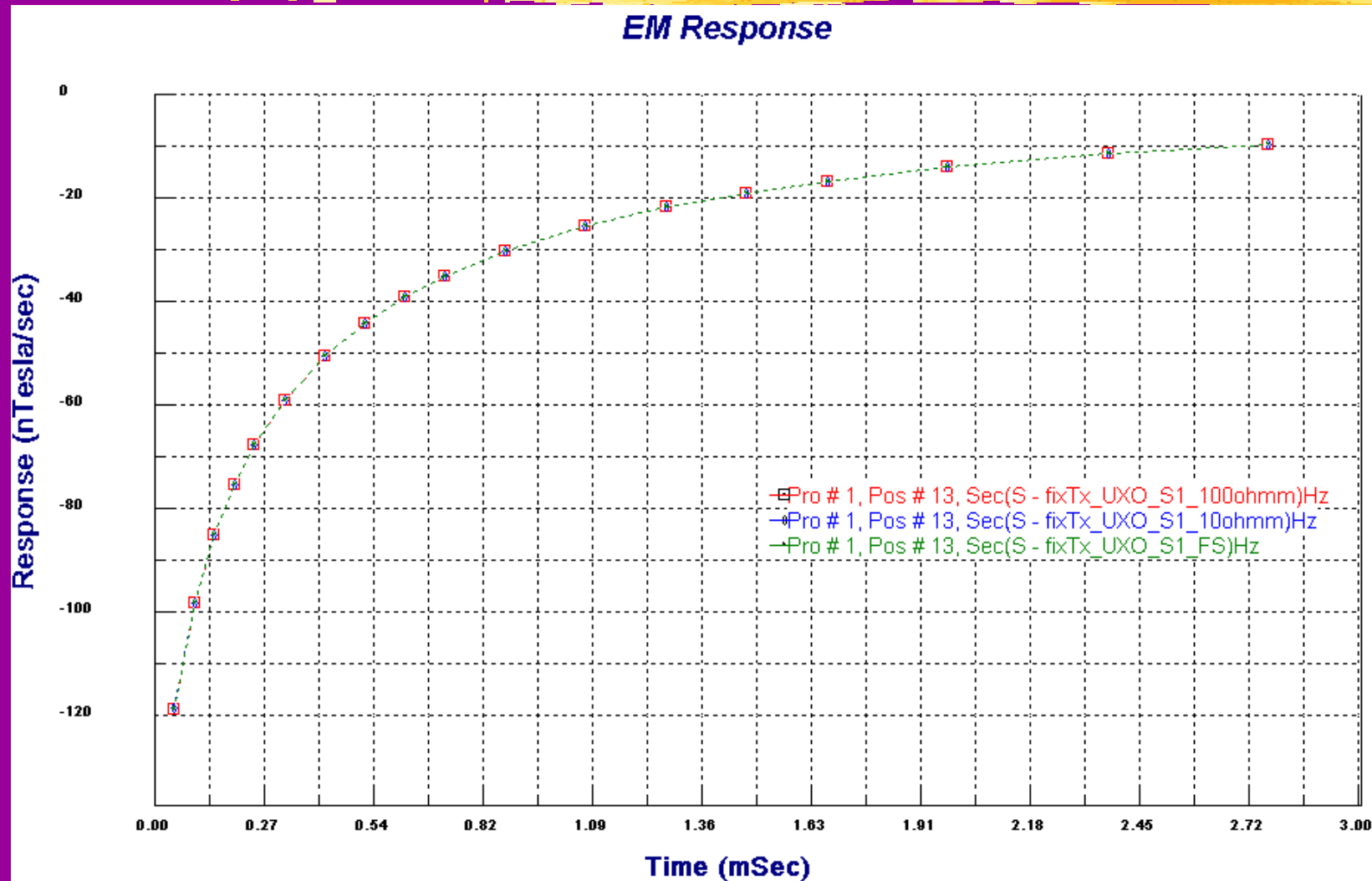
Magnetic Sphere



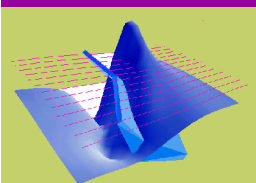
5/2/2002 Decay at (0,0) – Susceptibility 5 (SI units)



Decay Comparisons – non-mag



5/2/2002



Decay Comparisons – all

