

Incorporating measured radial field in simulation.

Magnetic scalar potential is solution to 2D Laplace's equation

Fit  $A_i, B_i$  to measured radial field at  $r=r_0$  (Final2016RadialFieldsppm.txt)

$$\psi = A_0 r_0 \ln(r) - \frac{1}{n} \sum_{i=1}^n [A_n \cos(n\phi) + B_n \sin(n\phi)] \frac{r_0^{n+1}}{r^n}$$

$$B_r = A_0 \frac{r_0}{r} + \sum_i^n [A_n \cos(n\phi) + B_n \sin(n\phi)] \left(\frac{r_0}{r}\right)^{n+1}$$

$$B_\phi = \sum_i^n [A_n \sin(n\phi) - B_n \cos(n\phi)] \left(\frac{r_0}{r}\right)^{n+1}$$

A(0:2)/68.9569,21.6858,30.4212/,  
B(0:2)/0,-28.6175,26.6923/