Example of Confined Potential Field from Reconstructed MFR
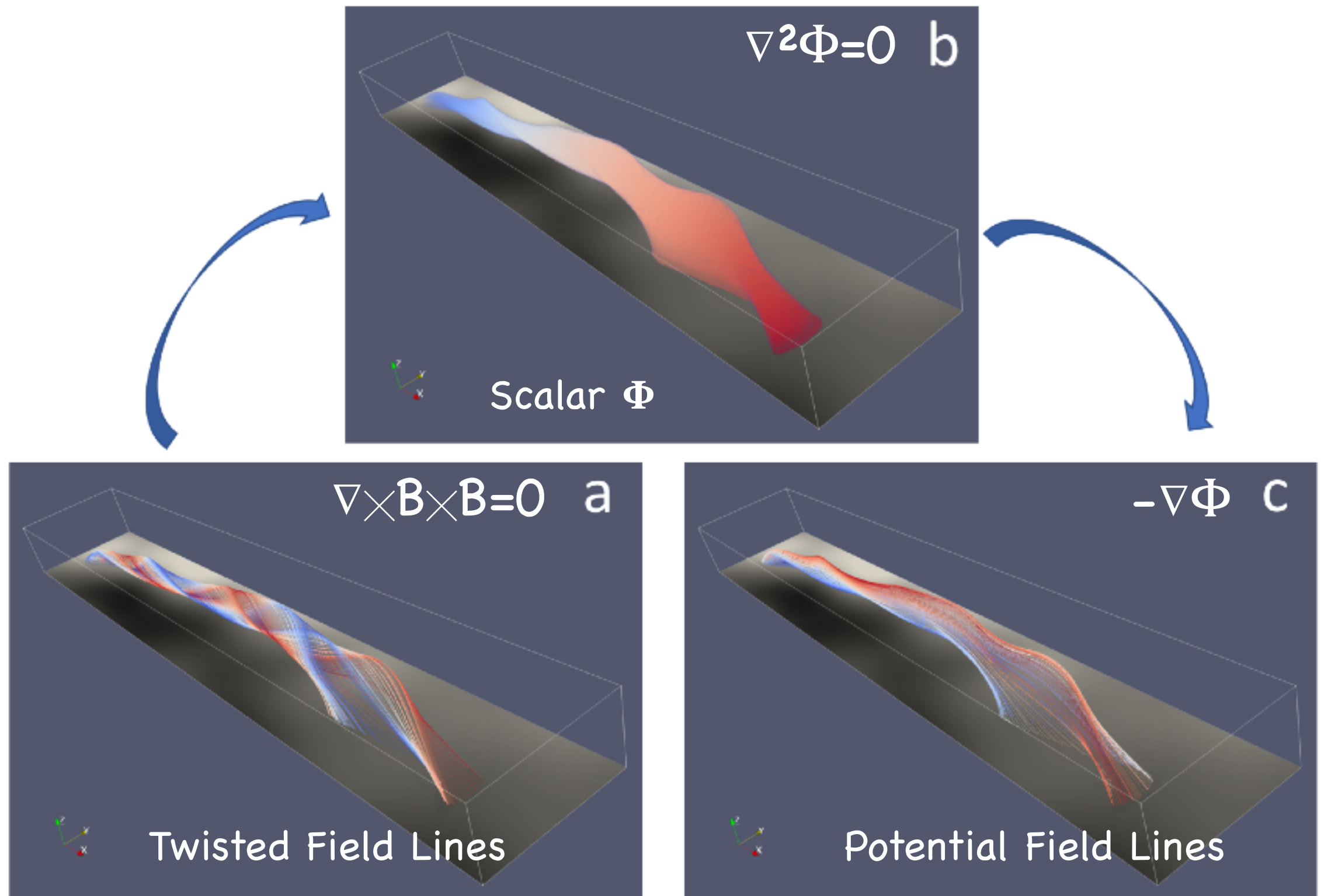
Calculation of the Helicity

$$A_x(x, y, z) = \int_0^z B_y(x, y, z')\mathrm{d}z'$$

DeVore gauge

Malanushenko & Longcope (2009)

$$A_y(x, y, z) = f(x, y) - \int_0^z B_x(x, y, z')\mathrm{d}z'$$

$$A_z(x, y, z) = 0$$

$$f(x, y) = \int_0^x B_z(x', y, 0)\mathrm{d}x'$$

$$H_R = \int_\Omega (\mathbf{B} - \mathbf{P}) \cdot (\mathbf{A} + \mathbf{A}_p)\mathrm{d}^3\vec{x}$$

Finn & Antonsen (1985)