Two defect Dzyaloshinskii approximation

Lucas Myers

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1 Two defect approximation

$$\epsilon q_1^2 \sin\left(2\epsilon\phi_c(\mathbf{x_R},\mathbf{y_R}) + 2q_1\theta_1(\mathbf{x_R},\mathbf{y_R}) + 2q_2\theta_2(\mathbf{x_R},\mathbf{y_R})\right)\left(\frac{\partial}{\partial \mathbf{x_R}}\theta_1(\mathbf{x_R},\mathbf{y_R})\right)^2 - \epsilon q_1^2 \sin\left(2\epsilon\phi_c(\mathbf{x_R},\mathbf{y_R}) + 2q_1\theta_1(\mathbf{x_R},\mathbf{y_R}) + 2 \tag{1}$$