

Dislocation motion and vertical vorticity in Rayleigh-Bénard convective structures

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CORRIGENDUM

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The result shown in figure 2 must have a negative sign in front, reflecting the opposite signatures of real and image dislocations. In fact, in order to satisfy the correct boundary condition (A2.1*b*), we must have (s being the signature of the real dislocation)

$$\phi(x, y) = -2\pi s D_{\parallel} \int_0^{\infty} dy' \partial_x [G(x, y - y' + \frac{1}{2}y_0) + G(x, y + y' - \frac{1}{2}y_0)].$$

Introducing a potential function $\tilde{\phi}(\mathbf{r})$ by $\partial_x \tilde{\phi} = \partial_y \phi$, $\partial_y \tilde{\phi} = -\partial_x \phi$ we find, apart from a constant,

$$\tilde{\phi}(x, y) = -2\pi s D_{\parallel} [G(x, y + \frac{1}{2}y_0) - G(x, y - \frac{1}{2}y_0)]$$

indicating the opposite signatures of the real and image dislocations. Indeed the boundary condition (A2.1*b*) can be replaced by the condition $\tilde{\phi} = 0$ on the boundary.