1)

$$\Phi_1 = \frac{1}{2} k \phi_1^2$$

$$\Phi_2 = \frac{1}{2} k \phi_2^2$$

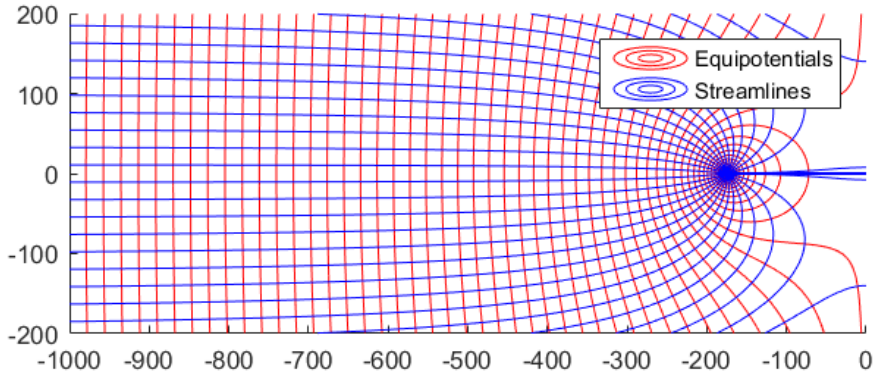
$$Q_{x0} = -\frac{\partial \Phi}{\partial x} = \frac{1}{2} k \frac{\phi_1^2 - \phi_2^2}{L}$$

2) $$\Omega = -w_0 z + \Phi_0 + \frac{Q}{2\pi} \ln(z - z_w) - \frac{Q}{2\pi} \ln(z+d)$$

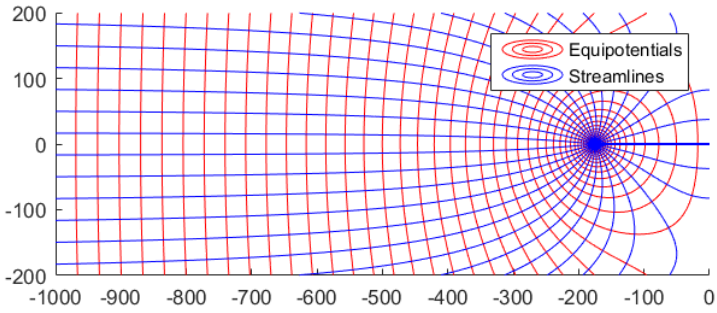
$$w = -\frac{d\Omega}{dz} = Q_{x0} - \frac{Q}{2\pi} \frac{1}{z-d} + \frac{Q}{2\pi} \frac{1}{z+d}$$

Flownets:

a= 0.6



a= 1.0



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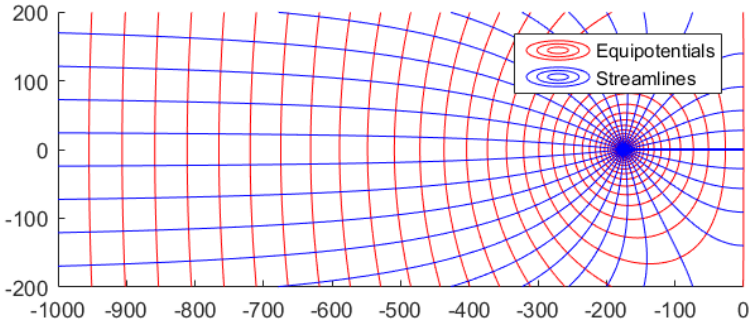
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Streamlines
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-600
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-100
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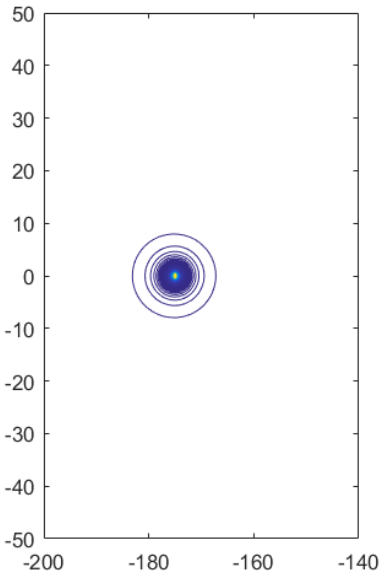
W:

a=0.6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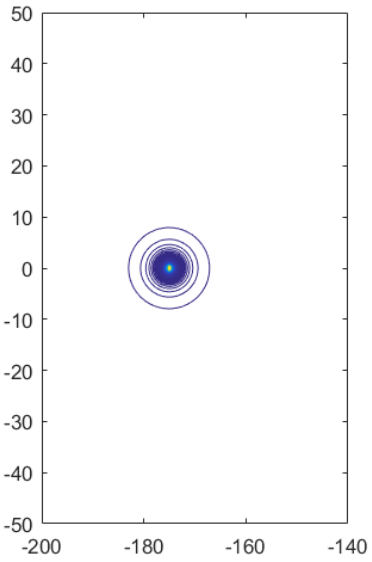
a=1.0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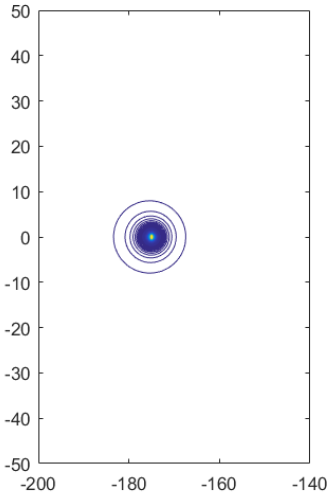
a= 1.5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