

SOME EXACT SOLUTIONS
OF THE 2D EQUILIBRIUM
EQUATIONS FOR A SMECTIC C

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S u m m a r y

A method for separation of variables in the two-dimensional (2D) equilibrium equation for smectic C with arbitrary splay and bend elastic constants is presented. The method takes advantages of the properties of analytic functions of complex variable. A number of applications of the obtained exact solutions are considered. In particular, these are the interaction between two “vortices” and between two “sources”, i.e. line disclinations with unit charges, as well as between two spherical particles with identical charges in the cases of either tangential or homeotropic boundary conditions for the director at the particle surfaces.