1032-49-79 **Yaniv Almog*** (almog@math.lsu.edu), Department of Mathematics, Lockett Hall, LSU, Baton Rouge, LA 70726. *Thin boundary layers of chiral smectics.*

We consider a reduced Landau-de Gennes energy functional which describes a chiral smectic liquid crystal with large elastic coefficients. We prove that, according to this model, chiral smectics exhibit behaviour which is similar to surface superconductivity: a thin layer of smectics near the boundary, and cholesterics in the bulk of the material. We obtain this behaviour for a wide region in the parameter space. We show that in a certain limit case this boundary layer can determine the direction of the helical axis of the cholesterics. (Received August 13, 2007)