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Andres Contreras* (math@nmsu.edu), NMSU Department of Mathematical Sciences, 1290 Frenger Mall MSC 3MB, Science Hall 236, LasCruces, NM 88003-8001, and **Carlos Garcia-A**, **Carlos Garcia-C.** and **Sookyung Joo.** *Bifurcation in smectic A liquid crystals at the critical magnetic field.*

We consider the Landau-de Gennes model of smectic A liquid crystals in the presence of an applied magnetic field. At the critical field, the uniformly layered state ceases to be stable. At this value, undulation takes place, however the description of the preferred state is not an easy task because the bifurcation at this value is not simple. In this work we overcome this difficulty and are able to find, somewhat surprisingly, two global bifurcation branches starting at the critical field. (Received August 11, 2015)