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Sookyung Joo* (sjoo@odu.edu), Department of Mathematics and Statistics, Old Dominion University, Norfolk, VA 23529, and **Carlos J. Garcia-Cervera** and **Tiziana Giorgi**. *Sawtooth profile of smectic A liquid crystals*.

We study de Gennes free energy for smectic A liquid crystals over \mathbb{S}^2 valued vector fields to understand the chevron (zigzag) pattern formed in the presence of an applied magnetic field. Well above the instability threshold, we show via Γ -convergence that a chevron structure where the director connects two minimum states of the sphere is favored. Numerical simulations illustrating the chevron structures for the de Gennes energy will be presented. (Received August 06, 2015)