NONSYMMETRIC PRESSURE TENSORS
AND THE SPIN EQUATION

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Abstract. In this paper we are concerned with the dynamics of liquid crystals with a non-symmetric part of the pressure tensor. The non-symmetric form we have already treated in the paper [2]. Here we are dealing with the fact that the liquid crystal is embedded in a fluid with non-symmetric velocity gradient. This has the effect that the molecules are turned by the antisymmetric part \((Dv)^A\), and this in addition to the movement induced by the director \(d\). Therefore there are two reasons for the general dynamics, one reason from the outside behaviour of the velocity \(v\) and another reason is by the near neighbour behaviour done by the form of the molecules, caused by the director \(d\). Hence we are able to combine the model of Grad and the theory of Ericksen & Leslie. We think that this paper gives the framework for other treatments of a system of spin equations.