

Ajdari, Prost, and Peliti Reply: It is unfortunate that we have overlooked the important contribution [1] made by the author (discussed in the preceding Comment [2]) to the question of long-range boundary interactions mediated by order parameter fluctuations in liquid crystals. We should have indeed quoted this paper in our Letter [3].

We would like, however, to point out that our work was motivated by the possibility of swelling a lamellar phase with a nematic solvent, and that we discussed therefore at length the case of a nematic, and more briefly the case of a smectic (and of columnar phases).

Neither did we discuss the possibility of a roughening transition in the smectic case: this interesting possibility is under investigation, both experimentally [4] and theoretically [5], and it appears that the case may be very different from the crystalline one.

Although the order of magnitude of the effect for crystals, contained in the author's Eq. (2), is plausible, we maintain that its experimental consequences are negligible in most situations. One possible exception could be the quantized layer growth for a small number of layers, but even in this case it is not clear how to differentiate this contribution from conventional van der Waals forces, or from other forces fundamentally short ranged but numerically sizable.

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[1] L. V. Mikheev, Zh. Eksp. Teor. Fiz. **96**, 632 (1989) [Sov. Phys. JETP **69**, 358 (1989)].

[2] L. V. Mikheev, preceding Comment, Phys. Rev. Lett. **69**, 860 (1992).

[3] A. Ajdari, L. Peliti, and J. Prost, Phys. Rev. Lett. **66**, 1481 (1991).

[4] L. Lejcek, J. Bechhoefer, and P. Oswald, ENS Lyon report, 1992 (to be published).

[5] J. Bechhoefer, L. Lejcek, and P. Oswald, ENS Lyon report, 1992 (to be published).