

No need for reconsidering the definition . . .

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When in the seventies and eighties materials were analysed which did not show lattice periodicity but were very similar to the then known crystals the IUCr decided to extend the definition of 'crystal'. This resulted in the well known definition which is a bit vague but points to a spectrum with essentially Bragg peaks. By being a bit vague one could also include crystals with defects and finite sizes. Of course, it was well known that there are other notions of order. There is a zoo of mathematical models with largely varying types of order (periodic, quasiperiodic, almost periodic, limit-periodic, limit-quasiperiodic, weakly periodic and so on). Of course, the borderline of the notion of crystal is largely a matter of taste. This borderline does not only depend on the spectrum, but also on questions like 'how many atoms do you need for a crystal?' For the existing solid state systems the present definition seems to work quite well. It is not so much based on a technique as on the properties of the Fourier transform of a correlation function. For the moment I do not see the need of reconsidering the definition, and in my view defining 'long range order' would be as vague as the present definition.

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