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Quenching a magnetized plasma close to the phase transition TORBEN OTT, University of Kiel, HARTMUT LÖWEN, University of Düsseldorf, MICHAEL BONITZ, University of Kiel — The presence of an external magnetic field is shown to prevent the crystallization of a two-dimensional one-component plasma after a sudden quench, provided its field strength surpasses a critical threshold. This unexpected behavior—which seemingly is in violation of the Bohr-van Leeuwen theorem— is shown to arise from the strong bending of the particle trajectories due to the magnetic field and is explained within a simple one-particle model which elucidates the geometric origin of the crystallization blocking.

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Torben Ott
University of Kiel

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