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The (2+1)-dimensional Gross-Neveu-Yukawa Model in large magnetic fields with the Functional Renormalization Group

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In this work, we calculate the phase diagram of the (2+1)-dimensional Gross-Neveu-Yukawa (GNY) model under strong magnetic fields at finite temperature and density. Large magnetic fields result in magnetic catalysis, a dimensional reduction of the system and enhancement of the chiral symmetry breaking. Using the functional renormalization group (FRG) in a hydrodynamic approach allows us to solve for the full effective potential at constant flavor numbers.

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