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New dynamic critical phenomena in nuclear and quark superfluids

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We study the static and dynamic critical phenomena near the possible high-density QCD critical point in the superfluid phase of nuclear and quark matter. In particular, we find that its dynamic universality class is different from those studied in QCD and condensed matter systems so far. We argue that this novelty stems from the interplay between the chiral criticality and the presence of the superfluid phonon—a feature specific for high-density QCD critical point.

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