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Cooling of Hybrid stars

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The appearance of quark matter may show a different property with traditional NS in the cooling process. With this purpose, we investigate the cooling of hybrid star. For the hadronic sector, we use a microscopic EOS derived within the Brueckner-Hartree-Fock many-body theory with realistic two-body and three-body forces. For the description of quark matter, we employ the Dyson-Schwinger quark model. We also consider the MIT bag model and field correlator method for the comparison. We find that once the quark matter appears, the hybrid star initiates a fast cooling again even the hadronic sector is suppressed by the pairing gaps.

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