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2+1 flavor QCD phase structure at finite temperature and density in chiral random matrix models TAKASHI SANO, HIROTSUGU FUJII, Univ. of Tokyo — The conventional chiral random matrix models are known to predict a second-order phase transition at finite temperature irrespective of the number of flavors. Here we propose a random matrix model which properly contains the UA(1) breaking term and as a result predicts a first-order transition for the three- flavor case. This is the first chiral random matrix model which allows us to investigate the effects of the strange quark degree on the QCD phase diagram, especially on the QCD critical point, at finite temperature and density. We will discuss the shape of the critical surface by varying the strength of the UA (1) anomaly.

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