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Effects of Shock Instability on Spin and Kick of Proto-Neutron Star in Supernova Cores WAKANA IWAKAMI, NAOFUMI OHNISHI, Dept. of Aerospace engineering, Tohoku Univ., KEI KOTAKE, Division of Theoretical Astronomy, National Astronomical Observatory Japan, SHOICHI YAMADA, Science and Engineering, Waseda Univ., KEISUKE SAWADA, Dept. of Aerospace engineering, Tohoku Univ. — We have numerically studied the standing/spherical accretion shock instability (SASI) for a core-collapse supernova. The core-collapse supernova is an explosion of a massive star in the final stage of its evolution. Although this spectacular phenomenon is a key issue for astrophysics, the explosion mechanism has not been understood perfectly. Recently, SASI has widely been noticed since it may play an important role for the explosion mechanism of a core-collapse supernova. In addition to it, the latest studies suggest that SASI may also affect on rotation and kick of a pulsar which is regarded as a neutron star formed by the supernova explosion. The origin of a pulsar spin and kick has been vigorously investigated, but it is still controversial among astrophysicists. We report on the effects of SASI on spin and kick of the proto-neutron star with the results of three-dimensional simulations.

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