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Linkup of non-rotating neutron-star and outer-Schwarzschild metrics

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Neutron stars (NSs) are the compact objects with the metrics detectably deviated from the flat spacetime. In the interior of every NS the metrics can be calculated from the model of its internal structure. In the surrounding empty space the metrics is described by the outer Schwarzschild solution (OSS) of Einstein field equations if a non-rotating NS is considered. In the linkup of both NS and OSS metrics, made in the outer physical radius of the NS, the components of metric tensor should be the continuous functions of radial coordinate. We deal with this linkup in the case of the simple Oppenheimer-Volkoff model of NS, in our contribution. We point out that the linkup occurs to be a non-trivial task and suggest a way, which enables to achieve the success. The continuity of metrics should be the demonstrated in each realistic model of NS.

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