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Constraints on the EoS of strongly interacting matter and on particle properties from relativistic heavy ion collisions

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The calculation of neutron star properties as well as the interpretation of the gravitational wave results for neutron star collisions requires the knowledge of the equation of state of strongly interacting matter. Relativistic heavy ion collisions have collected over the last years a number of results which are sensitive on the nuclear equation of state and the properties of elementary particles if they are brought in a strongly interaction environment. State of the art transport theories like PHSD or PHQMD have been used to extract this equation of state information contained in the experimental results. We report on what we know presently about the equation of state up to densities of about 3 times normal baryon densities and temperatures up to around 100 MeV.

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