Contribution ID: **117** Type: **Contributed talk**

Elements formation in radiation-hydrodynamics simulations of kilonovae

Thursday 19 September 2024 15:15 (15 minutes)

I'll present the results from a self-consistent 2-dimensional (ray-by-ray) radiation-hydrodynamic simulation of BNSM ejecta with an online nuclear network (NN) up to the days timescale. An initial numerical-relativity ejecta profile composed of the dynamical component, spiral-wave and disk winds is evolved including detailed r-process reactions and nuclear heating effects. A simple model for the jet energy deposition is also included. I'll discuss how the commonly assumed approach of relating the final nucleosynthesis yields to the initial thermodynamic profile of the ejecta can lead to inaccurate predictions and what are the main deviations we find compared with results obtained by using NN in post-processing. I'll also analyze the effects of the polar jet on nucleosynthesis patterns and kilonova light curves

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