



Contribution ID: 33

Type: **not specified**

## **Selected Poster: The liquid-gas phase transition within the temperature-dependent DD-NLD mode**

*Friday 9 September 2016 11:00 (30 minutes)*

The equation of state (EOS) of dense matter is essential for modeling compact astrophysical objects and sets the conditions for the creation of chemical elements in the universe. To provide it, we use the generalized DD-NLD relativistic mean-field model (RMF) with density-dependent nucleon-meson couplings and higher-order derivative couplings between nucleons and mesons. The model is extended to describe the properties of homogeneous nuclear and stellar matter at finite temperatures, covering the full range of isospin asymmetries from neutron matter to symmetric and proton matter. The properties of the liquid-gas phase transition for sub-saturation densities and not too high temperatures are studied in comparison to the standard RMF descriptions. Furthermore critical lines and points in the phase diagram can be extracted, and the general features of the phase transitions can be explored.

### **Summary**

**Presenter:** ANTIC, Sofija (GSI)