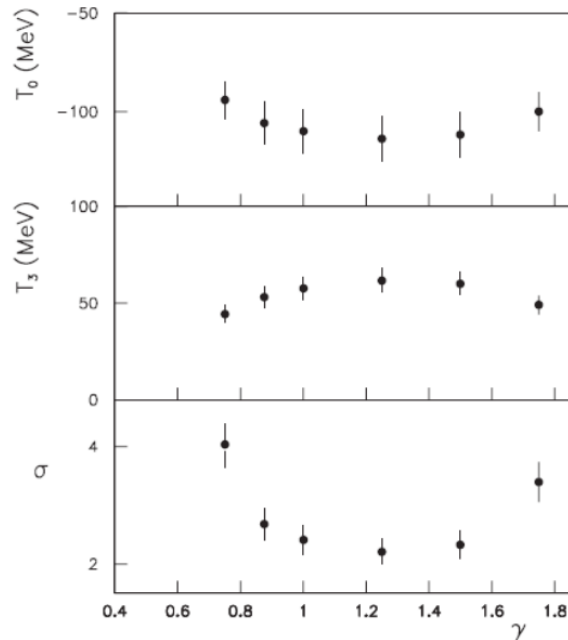


Cluster formation in CoMD and the EoS (T=0)

- The pre-conditions which allow for the spontaneous formation of Clusters in these kind of approaches are the many-body correlations of the model and the use of localized nucleonic wave-packets.
- To reproduce the standard properties of Nuclear Matter at the saturation density, these correlations make necessary the changes of the parameter values describing the effective interaction with respect the values obtained in Mean-Field (MF) approaches.

Results from CoMD «box» calculations
primary quantity S_V Overlap between wave packets



$$V(\mathbf{r}, \mathbf{r}') = V^{(2)}\delta(\mathbf{r} - \mathbf{r}') = \frac{T_0}{\rho_0}\delta(\mathbf{r} - \mathbf{r}') + \frac{2T_3\rho^{\sigma-1}}{(\sigma + 1)\rho_0^\sigma}\delta(\mathbf{r} - \mathbf{r}') + \frac{T_4}{\rho_0}F'_k(2\delta_{\tau,\tau'} - 1)\delta(\mathbf{r} - \mathbf{r}'). \quad (1)$$

From M.F. calculations

$$T_0(\text{M.F.}) = -263 \text{ MeV}; T_3(\text{M.F.}) = 208 \text{ MeV}; \sigma(\text{M.F.}) = 1.25$$

S_V Overlap between wave packets \neq Density

$$E(\rho) \neq E(S_V[\rho])$$