

## **Split-up algorithm in the metric space for the equations of structured population dynamics.**

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Abstract: The talk is based on the joint research with Jose Carillo, Rinaldo Colombo, Anna Marciniak-Czochra and Agnieszka Ulikowska. As the example of the structured population equations we mean the equation of so-called age-structured model (transport equation in a half space with non-local boundary conditions) or size structured model (transport equation with an integral term in space on the right hand side), see for more details B. Perthame "Transport equations in mathematical biology" 2007.

From the biological reason there is a need for using initial data in the space of Radon measures. Using the Lipschitz-bounded distance (flat metric) we prove Lipschitz dependence of the solutions to linear and nonlinear system w.r.t. initial data and coefficients of equations.

Significant simplifications of the calculations is done by using the split-up algorithm, dealing separately with a semigroup of transport and a semigroup of an integral kernel operator.