Positive Nonlinear Sem–Group Associated to a Class of Abstract Kinetic Models

Cecil P. Grünfeld

"Gheorghe Mihoc - Caius Iacob" Institute of Mathematical Statistics and Applied Mathematics of Romanian Academy, Bucharest, Romania
e-mail: `grunfeld@venus.nipne.ro`

We introduce a positive nonlinear semi-group in an ordered space, associated to a class of evolution equations abstracting properties of known kinetic models of interest in applied mathematics and physics. We investigate the basic properties of the semi-group, in particular, its invariants and long-time behavior. In addition, discuss the usefulness of the results in some application examples, and also present some challenging open problems.