1135-35-1393   **Robert L Pego*** (`rpego@cmu.edu`), Pittsburgh, PA 15213. *Merging-splitting models of group dynamics by Bernstein function theory.* Preliminary report.

We study coagulation-fragmentation equations inspired by a simple model derived in fisheries science to explain data on the size distribution of schools of pelagic fish. The model lacks detailed balance and admits no H-theorem, but we are able to study equilibria, self-similarity and large-time behavior using complex function theory for Bernstein and Pick functions. A useful tool is the characterization of the generating functions of completely monotone sequences as those Pick functions analytic and nonnegative on $(-\infty, 1)$. This is joint work with Jian-Guo Liu and Pierre Degond. (Received September 21, 2017)