Abstract:
"We show existence and uniqueness theorem of local strong solutions to the Navier-Stokes equations with arbitrary initial data and external forces in the homogeneous Besov space with both negative and positive differential orders which is an invariant space under the change of scaling. If the initial data and external forces are small, then the local solutions can be extended globally in time. Our solutions also belong to the Serrin class in the usual Lebesgue space. The method is based on the maximal Lorentz regularity theorem of the Stokes equations in the homogeneous Besov spaces.
This is a joint work with Prof. Senjo Shimizu at Kyoto University."