Navier-Stokes equations with external forces in time-weighted Besov spaces

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We show existence theorem of global mild solutions with small initial data and external forces in the time-weighted Besov space which is an invariant space under the change of scaling. The result on local existence of solutions for large data is also discussed. Our method is based on the L^p-L^q estimate on the Stokes equations in Besov spaces. Since we construct the global solution by means of the implicit function theorem, as a byproduct, its stability with respect to the given data is necessarily obtained. This is the joint work with Prof.Senjo Shimizu at Univ. Kyoto.