1162-35-14 **Kazuo Yamazaki*** (kyamazak@ttu.edu), Department of Mathematics & Statistics, Texas Tech University, Lubbock, TX 79409. *Remarks on the non-uniqueness in law of the Navier-Stokes equations up to the J.-L. Lions' exponent.* Preliminary report.

Lions in 1959 introduced the Navier-Stokes equations with a viscous diffusion in the form of a fractional Laplacian; subsequently, in 1969 he claimed the uniqueness of its solution when its exponent is not less than $1/2 + n/4$ where n is the spatial dimension. Following the stochastic framework of convex integration presented by Hofmanová, Zhu, and Zhu (2019, arXiv:1912.11841 [math.PR]), we prove the non-uniqueness in law for the three-dimensional stochastic Navier-Stokes equations generalized via the viscous diffusion in the form of a fractional Laplacian with its exponent less than five quarters. Moreover, we prove non-uniqueness in law of the two-dimensional stochastic Navier-Stokes equations when the exponent of the fractional Laplacian is strictly less than one. It should be emphasized that the definitions of these solutions are rougher than that of Leray-Hopf type. (Received August 09, 2020)