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The 3D incompressible Navier-Stokes equations with partial hyperdissipation.

The three-dimensional incompressible Navier-Stokes equations with the hyperdissipation $(-\Delta)^\gamma$ always possess global smooth solutions when $\gamma \geq \frac{5}{4}$. Tao and Barbato, Morandin and Romito made logarithmic reductions in the dissipation and still obtained the global regularity. This talk presents a very recent work on a different type of reduction in the dissipation and proves the global existence and uniqueness in the H^1 -functional setting. (Received February 05, 2017)