Existence and uniqueness of solutions to p-Laplacian parabolic equations with constraints coupled with Navier-Stokes equations in 2D domains

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This talk is concerned with the system of nonlinear heat equations with constraints coupled with Navier-Stokes equations in two-dimensional domains. In 2012, Sobajima, Tsuzuki and Yokota proved the existence and uniqueness of solutions to the system with heat equations include diffusion term $\Delta\theta$, where θ represents the temperature. This paper gives the existence result in which Laplace operator Δ is replaced with p-Laplace operator Δ_p, where $p > 2$.

References

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[2] *M. Sobajima*, *Y. Tsuzuki*, *T. Yokota*: Existence and uniqueness of solutions to nonlinear heat equations with constraints coupled with Navier-Stokes equations in 2D domains, Adv. Math. Sci. Appl. *22* (2012), 577–596.