Global existence of weak solutions to a three-dimensional chemotaxis-Navier–Stokes system with degenerate diffusion and logistic source *

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In this talk we deal with a three-dimensional chemotaxis-Navier–Stokes system with degenerate diffusion and logistic source. In the case of the degenerate diffusion without fluid environment Jin [1] showed existence and boundedness of global weak solutions. On the other hand, in the case of the linear diffusion with Navier–Stokes equation Lankeit [2] established global existence of weak solutions and their eventual smoothness and stabilization. However, the case of the degenerate diffusion with Navier–Stokes equation has not been studied yet. The purpose of this talk is to establish global existence of weak solutions in the chemotaxis-Navier–Stokes system with degenerate diffusion and logistic term.

References

[1] C. Jin, *Boundedness and global solvability to a chemotaxis model with nonlinear diffusion*, J. Differential Equations **263** (2017), 5759–5772.

[2] J. Lankeit, *Long-term behaviour in a chemotaxis-fluid system with logistic source*, Math. Models Methods Appl. Sci. **26** (2016), 2071–2109.

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