Title: Simulations of reactive settling of activated sludge with a reduced biokinetic model

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Denitrification in secondary settlers in wastewater treatment plants is a significant problem.

Modelling such a process leads to a nonlinear convection-diffusion-reaction partial differential equation, which needs non-standard numerical methods to obtain reliable simulations.

The Bürger-Diehl settler model is extended to include biological reactions.

The final model describes the last settling stage of a sequencing batch reactor for denitrification.

A numerical scheme is tested for simulations with several initial conditions.