1035-92-1230　　　　**Felix J Apfaltrer*** (`fapfaltrer@bmcc.cuny.edu`), 199 Chamber Street, Borough of Manhatttan Comunity College, Mathematics/ N520, New York, NY 10007. *Finite Element Methods Applied to Computational Neuroscience.* Preliminary report.

An outstanding problem in computational neuroscience is how to use population density methods to model neural networks with realistic synaptic kinetics in a computationally efficient manner. Previous methods used dimension reductions to make computations effective. Operator splitting methods have shown effective in 2 dimensional state space. But realistic kinetics require at least a 3 dimensional state space. We hope that Finite Element Methods will allow to make higher dimensional methods more efficient. (Received September 19, 2007)