

Meeting: 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-49-951 **Volodymyr Hryniv*** (hryniv@math.utk.edu), University of Tennessee, Department of Mathematics, 121 Ayres Hall, Knoxville, TN 37996-1300, and **Suzanne Lenhart** and **Vladimir Protopopescu**. *Optimal control of convective boundary condition in a thermistor problem*. Preliminary report.

Optimal control of a thermistor problem is considered. The heat transfer coefficient is taken as the control. The state system has two nonlinear elliptic partial differential equations. We establish the existence of an optimal control that minimizes the objective functional, which involves keeping the temperature and the heat transfer coefficient low (which gives low temperature variation). (Received October 01, 2004)