1056-49-1194 **Jesus A. Pascal*** (pascal@math.lsu.edu). *On the Principle of Smooth Fit for Some Convex Optimal Control Problems.*

The purpose of this work is to show that the principle of smooth fit can even fail for convex optimal control problems. Using the Dynamic programming approach, we get the value function for a convex optimal control problem. The value function turns out to be a convex viscosity solution of the dynamic programming equation, not $\mathbb{C}^2$ along the free boundary, and hence not a classical solution of the above mentioned equation. (Received September 21, 2009)