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Yevgeny Goncharov* (goncharov@math.fsu.edu), 202A Love Building, Department of Mathematics, Florida State University, Tallahassee, FL 32306. *On the properties of endogenous mortgage rates*. Preliminary report.

The problem of the mortgage rate implied by the yield curve is known to be addressed in proprietary Wall Street systems, but not (widely) published. In this talk we prove the existence and uniqueness of the endogenous mortgage rate functional equation. We also prove the monotonicity of the mortgage rates. We will show how this property can lead to a more efficient computation of the mortgage rate as a function of the underlying state variables. We propose a new computational algorithm based on the level set idea which is capable of breaking the curse of dimensionality of the mortgage rate function computations. (Received July 24, 2006)