Financial bubbles with finitely lived asset

In this talk, I will report on work with H. Berestycki, C. Bruggeman and R. Moneau. We study the speculative value of a finitely-lived asset when investors disagree and short sales are limited. In this case, investors are willing to pay a speculative value for the resale option they obtain when they acquire the asset. We characterize the equilibrium speculative value as a solution to a fixed-point problem. A Dynamic Programming Principle applies and is used to show that the minimal solution to the fixed-point problem must be a viscosity solution of a naturally associated (non-local) obstacle problem. This viscosity solution satisfies a comparison principle that can be used to derive comparative statics results concerning the effect of changes in parameters of the problem. A characterization of the exercise boundary allows us to study the effect of an increase in the costs of transactions on the value of the bubble and on the volume of trade, and in particular to quantify the effect of a small transaction (Tobin) tax.