

# Introduction to nonlinear modeling with Dolo

[Dolo](#) is a modeling software, meant to describe rational expectations economic models with occasionally binding constraints.

During the workshop the participants will learn to:

- define a model using Dolo syntax, including occasionally binding constraints
- solve a model, simulate and inspect the solution in the Julia environment
- compute accuracy and contrast several approximation options
- use value function iteration
- use first-order conditions and apply several variants of time-iteration algorithms (time-iteration, improved time-iterations, endogenous grid points)
- compute a market equilibrium with heterogeneous agents and simulate its response to an aggregate shock
- use Dolo's Julia API directly to solve a model with discrete choices

Exposition will alternate between short lectures and hands-on sessions drawing on several economic applications (consumption savings and sudden-stops models, endogenous default, RBC and new-keynesian model with ZLB). Participants are expected to work on their laptops although an online backup option will be provided. Prior experience with Julia is valuable but not strictly required.