High Performance Computing Workshops for the Central Bank of Chile

Course 2: Advanced Macroeconomic Modeling with Julia

Provider: QuantEcon

August 2, 2022

Course 2 will provide

1. In-person teaching, including lectures and tutorials.
2. Non-graded tutorial and homework exercises.
3. Accompaning Jupyter notebooks containing both code and theory.
4. Access to a cloud computing option for all workshop participants.

Instructors:

1. John Stachurski (Australian National University, Co-founder of QuantEcon)
2. Pablo Winant (CREST and ESCP Business School, lead developer of `dolo`)

Dates:

- 26th and 27th of September 2022

Daily format:

- 08:30 - 10:30: Lecture
- 10:30 - 11:00: Coffee Break
- 11:00 - 13:00: Practice Sessions
- 13:00 - 14:30: Lunch (at Central Bank offices)

- 14:30 - 16:00: Office hours

Price: 5000 USD.

Topics:

1. Introduction to the Julia language
2. Types, multiple dispatch and the Julia JIT compiler
3. Structural models in Julia
4. Perturbation methods
5. Time-iteration variants
6. Global solution techniques and occasionally binding constraints models
   - "improved" algorithms
   - multistep problems and endogenous grids
   - dimensionality reduction
7. Heterogeneous agent models
8. Parallel computing in Julia
9. Performance optimization