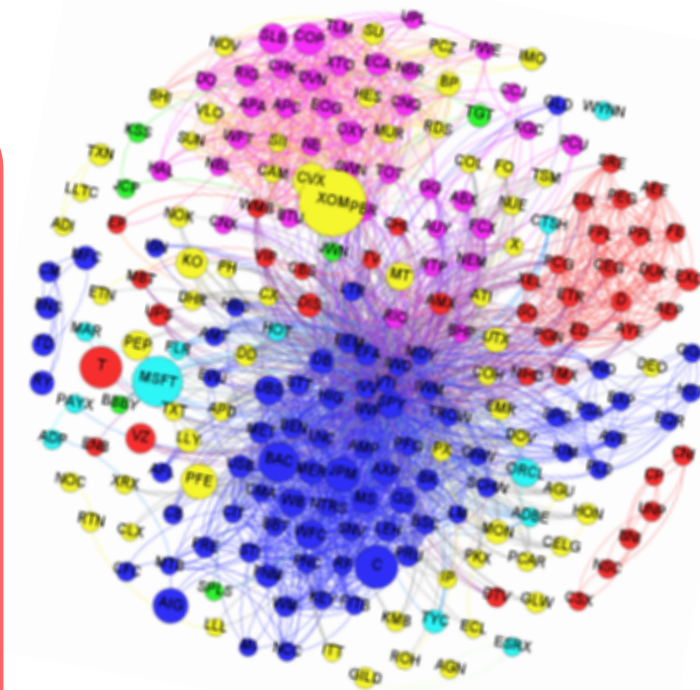




Around the world of maths (at Memotef) in 5 minutes



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XII Giornata della Ricerca MEMOTEF
May 31, 2022

Keywords:





Maths in Finance

What?

Oil \ beach concessions

*Asset management and
Portfolio selection*

*(In)stability of financial
markets*

*Markets variability and
discontinuity*



How?

*Dynamic programming
and optimization*

*Optimization, Graphs
& Networks*

*(Multi)fractional
stochastic processes*

*Jump-diffusion stochastic
volatility processes*



Connections with...

*Policy and decision
making (economics)*

*Probability
distribution Network
analysis (Statistics)*

*Sustainability of
sovereign debts
(economics)*

*Parameters' estimation
(statistics)*



Maths in Insurance

What?

Insurance premium
evaluation

Insurance company
solvency and ruin
probability

Mortality \ longevity
forecasting

Retirement capital
accumulation

How?

Stochastic optimal
control theory

Volterra integral
equations

Neural networks and
deep learning

Ptf insurance strategies
and stochastic processes

Connections with...

Risk management
(management and fin.
intermediaries)

Pension and health
systems (economics
and demography)

Financial sustainability
of pension systems
(economics)



Maths in Economics

Decision theory:

AI & behavioral finance

Robust analysis of systemic risk

Complex networks & optimization:

Partition & clustering in

services planning

Game theory:

*How to quantify and manage the
reliability of (complex) systems?*

Government fiscal rules:

*How to measure the reactivity to
the debt-to-GDP ratio?*

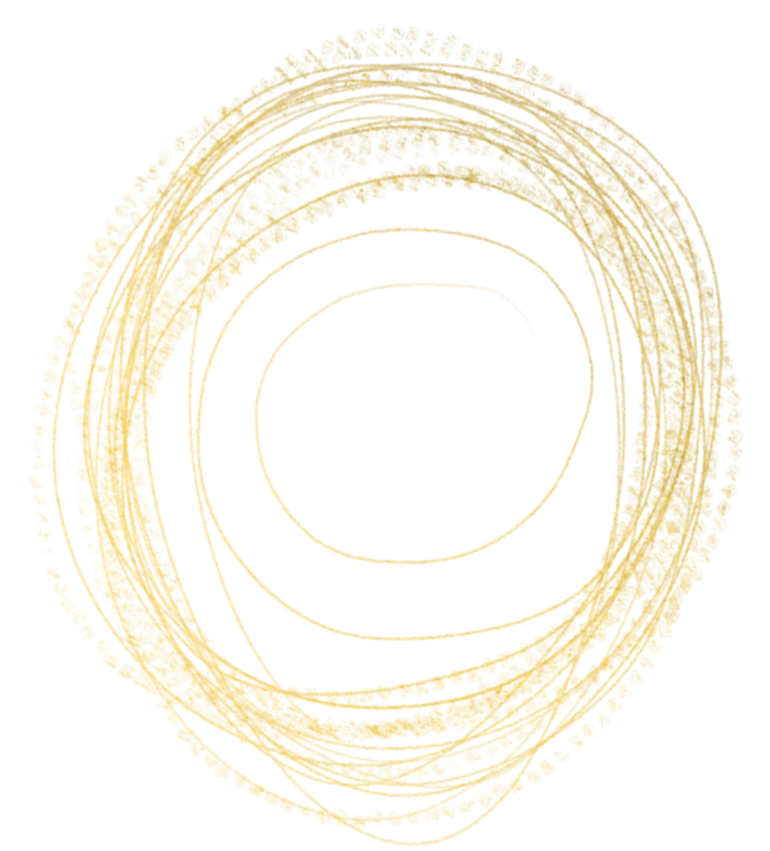
*...and
much more
besides*



Research projects (also in progress)

- *Progetti di Ateneo (small and medium)*
- *Prin 2022 (proposal)*
- *Pnrr (Pe01-7 & Pe09-8)*
- *International partnerships*

For further details...



...See you at the First
Floor!