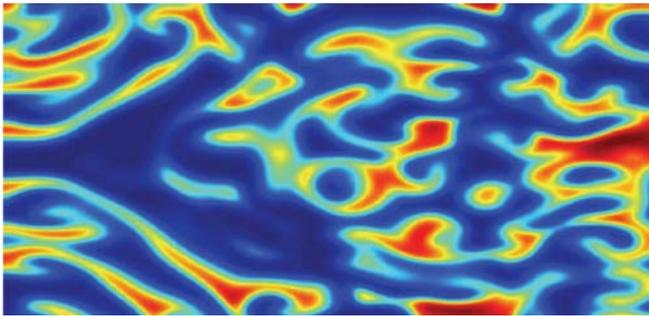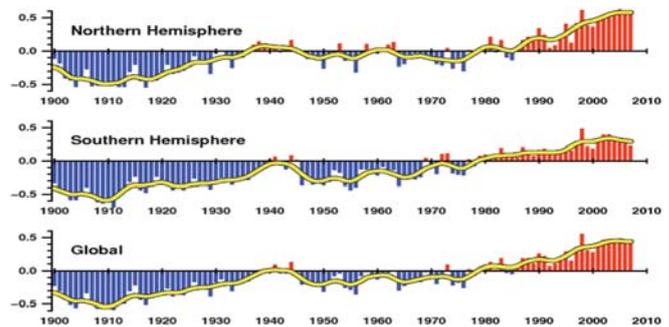# Financial Prediction and Risk Management

from the high street to the international scale

Predator – Prey dynamics

Graphs of temperature over the last century

Introduction

Risk assessment is a key part of a Bank's financial stability work. Identifying key risks to the system, understanding how they may unfold and gauging their significance can help with prioritising and focusing work to reduce risks and can inform crisis management planning.

We can replace the word **Bank** by:

• small business,

• local government,

• multinational.

All organisations need to understand their exposure to the unpredictable world in which they live. Space-based measurement can be used to understand agricultural health, environmental health, and to predict how these may change. Mathematics is a fundamental tool in this understanding.

Expertise

Training

The team at Leicester have extensive expertise in the training of people in the use of mathematics, from the basic level needed to understand simple risk assessment needed by small business, to the more complicated hedging of large scale risk required by banks. We have a suite of courses available, delivered through Leicester University Financial Training (LUFT), which can be tailored to meet the needs of a variety of clients.

Data Handling and Algorithm development

We also have experience in the interpretation of data, from biological to financial applications, and can build numerical algorithms for interpreting and modelling of data.

G-STEP
GMES – Space Technology Exchange Partnership

Web: www.2.le.ac.uk/departments/mathematics/luft

Project Contact Details:
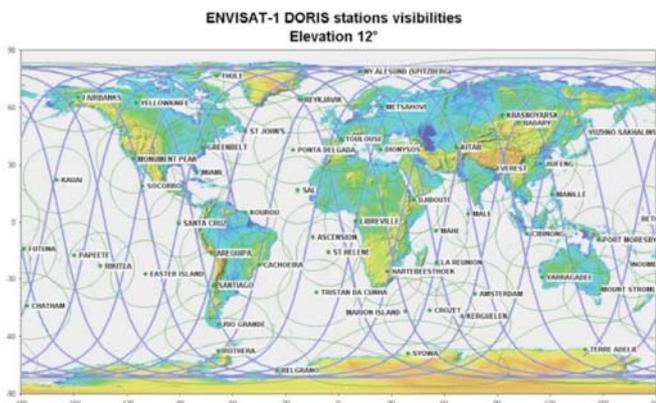Prof. Jeremy Levesley · **E-mail:** jl1@le.ac.uk · **Tel:** 0116 252 3897
Prof. Sergei Levendorskii · **E-mail:** sl278@le.ac.uk · **Tel:** 0116 252 1794

Forefront of research

The University of Leicester team are at the forefront of developing more robust methods for modelling the behaviour of the financial world, and for detecting the conditions in which crises are developing.
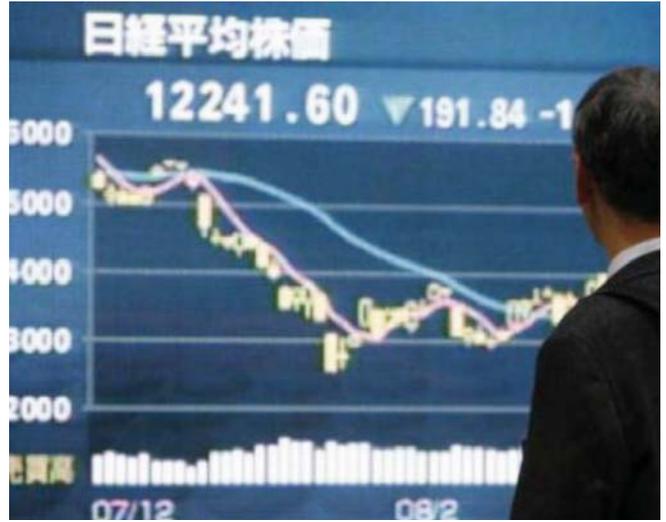

We have computational and algorithmic expertise to build new methods for better assimilating data from a variety of sources.

ENVISAT-1 DORIS stations visibilities
Elevation 12°

Summary

The proper quantification of risk is important to all business, and as has been recently shown, the world understands its risks very poorly.

The team at the University of Leicester can help business partners understand their risks in a variety of contexts, and help them to make appropriate choices to offset the possibility of future problems.

We have expertise in development of algorithms for data mining and assimilation which could give businesses from the small to the large the competitive advantage they need in order to survive and flourish in a difficult world.

The Bank of England website:
http://www.bankofengland.co.uk/financialstability/role/risk_assessment/

Linking business with space

http://www2.le.ac.uk/projects/g-step

G-STEP is a knowledge-exchange hub to support and accelerate business and policy exploitation of Earth Observation (EO) data and information services.