

Lunch

14.00	Drive to Lomonosov Moscow State University
15.00 - 16.30	Excursion to Lomonosov Moscow State University Earth Museum and the viewing point from Rotonda.
19.00	Ballet «Sleeping beauty» of Summer Ballet Seasons in Russian Academic Youth Theatre (RAMT), Theatre square, 2 (next to the Bolshoi theatre). Tickets booked and provided to interested participants.

11 of August, Friday

Participants departure. Arranged taxi from the Hotel to airport.



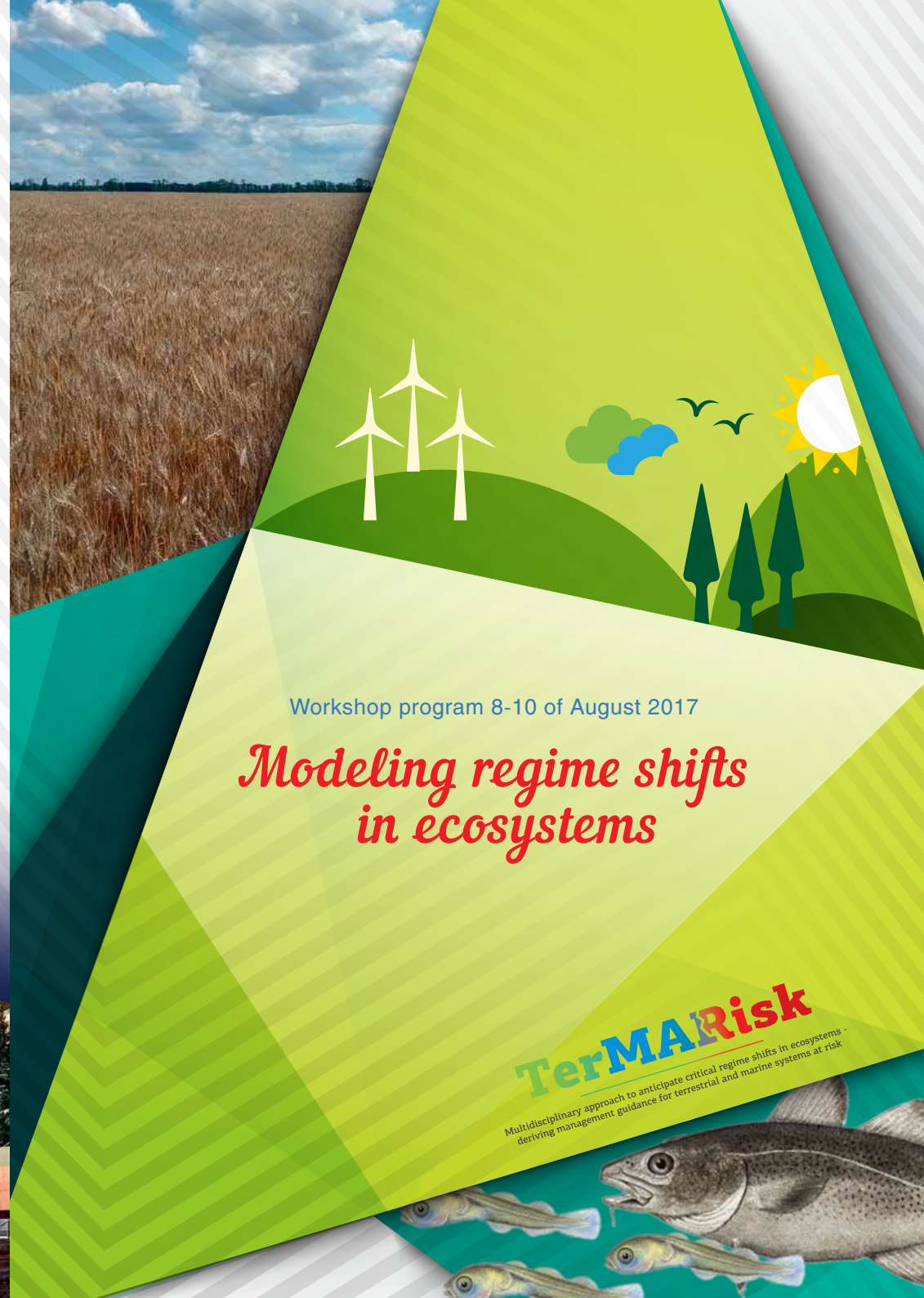
UiO : Centre for Ecological and Evolutionary Synthesis
University of Oslo



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Soil Science Institute



mn.uio.no/cees
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Workshop program 8-10 of August 2017

Modeling regime shifts in ecosystems

TerMARisk
Multidisciplinary approach to anticipate critical regime shifts in ecosystems -
deriving management guidance for terrestrial and marine systems at risk

7 of August, Monday

Participants arrival, arranged taxi to Metropol Hotel (Teatralnyi proezd, 2)

8 of August, Tuesday

“Modeling complex dynamic systems»

9.00 - 9.30

Welcome talk (Director in Charge Igor Y. Savin), excursion through the Institute laboratories.

9.30 - 10.15

A multi-objective calibration of RothC within the GLUE framework: an example of the equifinality inherent to first-order SOC model structures (Dr. Lorenzo Manichetti, Swidish University of Agricultural Sciences)

Coffee-break

10.45 - 11.30

Review on modeling approaches to estimate soil carbon fluxes and stocks and risks of regime shifts induced by climate change (Dr. Fernando Moyano, Georg-August University of Goettingen)

11.30 - 12.15

Mathematical modeling of regime shifts in soils (Dr. Nadezda Vasilyeva, Interdisciplinary Laboratory for Mathematical Modeling of Soil Systems, Dokuchaev Soil Science Institute)

Lunch (at Grabli, 10 min walk)

13.30 - 14.15

Regime shifts in a fish population model (Anna-Marie Winter, Center for Ecological and Evolutionary Synthesis, University of Oslo and Economics and Natural Resources Group, Wageningen University)

Coffee-break

14.45 - 15.30

Review on modeling complexity in ecosystems (Prof. Bai-Lian Larry Li, Ecological complexity and modeling, University of California)

Coffee/snacks

*(optional)
18.00 - 19.30*

River boat (Radisson) with a dinner and city sightseeing overview

9 of August, Wednesday

«Early warning signals of regime shifts in ecosystems»

9.00 - 9.45

Early warning signals of regime shifts in time series of data from financial markets (Dr. Elena Rovenskaya, Advanced Systems Analysis, International Institute for Applied Systems Analysis)

9.45 - 10.30

Applicability of time series of soil monitoring data for development of early warning signals methodology for prediction of

critical changes in soils (Taras Vasiliev, Interdisciplinary Laboratory for Mathematical Modeling of Soil Systems, Dokuchaev Soil Science Institute)

Coffee-break

11.00 - 11.45

Analysis of modelled time series of fish population under different scenarios of commercial exploitation and development of methodology for detection of early warning signals of regime shifts (Dr. Artem Vladimirov, Interdisciplinary Laboratory for Mathematical Modeling of Soil Systems, Dokuchaev Soil Science Institute)

Lunch (at Varenichnaya, 10 m walk)

13.30 - 14.15

Solving optimal control problems for commercially exploited ecosystems on example of fish population (Dr. Ludmila Artemyeva, Optimal Control Department, Faculty of Computational Mathematics and Cybernetics, Lomonosov Moscow State University).

14.15 - 15.00

Review on drought risks in ecological systems (Prof. Ana Maria Tarquis, Complex systems group, Educational Innovation Group RiskMetrics, Research Center for the Management of Agricultural and Environmental Risks, Department of Applied Mathematics, Universidad Politécnicna de Madrid).

15.30 - 16.00

Round table 1. Discussion of existing EWS methods (statistical approaches, their applicability and limitation). Potential applications of mechanistic dynamic models of complexity in ecosystems for development of early warning signal methodology.

Coffee/Snacks

16.30 - 18.00

Excursion to Tretyakovskaya gallery with official English speaking guide. (5 min walk from the workshop)

19.00

Social dinner at Restaurant

10 of August, Thursday

Feedbacks and summary

9.00 - 10.30

Round table 2. Conclusions, feedback and ideas for development of early warning signal methodology to predict regime shifts in ecosystems using mathematical modeling of complex dynamics.

Coffee-break

11.00 - 12.30

Round table. Actual questions in ecosystem modeling. Formulation of scientific research topics interesting for joint international collaborations.

12.30 - 13.00

Workshop together photographing and short interviews (2-3 minutes).