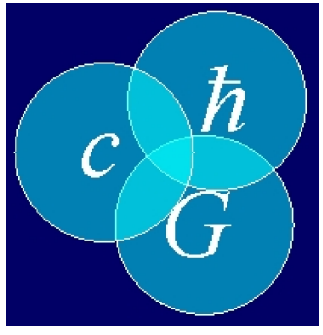
EUROPEAN COOPERATION
IN SCIENCE AND TECHNOLOGY

QSPACE

Quantum Structure of Spacetime

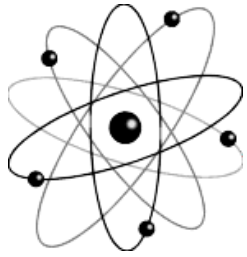
MPNS COST Action MP–1405



Richard Szabo (Chair)

Brussels April 30, 2015

Quantum Spacetime Structure

- Quantum + Gravity  + 

- Spacetime quantization: [ , ] ≠ 0

- Noncommutative Geometry (NCG):
  Model quantum geometry of spacetime

- **Goal:** Bring together world-leading researchers in NCG and related topics throughout Europe to significantly improve understanding of (quantum) spacetime, with emphasis on connections to real-world models and experiment

Composition of the Action

- 115 Participants; Expansion to $>$ 200 expected
- 23 COST Countries Austria, Belgium, *Bulgaria*, *Croatia*, *Cyprus*, *Czech Republic*, Denmark, France, Germany, Greece, *Hungary*, Iceland, Ireland, Italy, *Luxembourg*, Netherlands, *Poland*, *Portugal*, *Serbia*, *Slovakia*, Spain, Switzerland, United Kingdom
- 1 Non-COST Country Japan
  Involvement of further non-COST countries anticipated
  Costa Rica, India, Lebanon
- Existing experience on MC of managing networks with similar aims
- Main organisors in addition to Chair:

Paolo Aschieri (Italy) Olaf Lechtenfeld (Germany)

Fedele Lizzi (Italy) George Zoupanos (Greece)

Networking – Why COST?

- Forge alliance between researchers pursuing different approaches to quantum geometry and apply results to quantum gravity; **defragmentate** research efforts across Europe, particularly with Inclusiveness Countries, and **reinforce** EU leadership in field
- **Foster** close interaction with experimental groups through theory/experiment study groups and workshops (new collaborations and results)
- Improve and expand collaboration in the community; **promote** emerging young talent; create contacts among ECIs and PhD students
- Platform to address gender balance, involvement of ECIs, family/life aspirations of scientists, increase public understanding
- Beyond COST: Horizon 2020

Organisation

- **Management Committee:** Chair/Vice-Chair $\longrightarrow$ Core Group $\longrightarrow$ Working Group (WG) leaders, STSM Coordinator, Gender and Outreach Coordinator
- WG1 – Noncommutative Geometry Applications:
  Phenomenological models and experimental searches
- WG2 – Noncommutative Geometry Structures:
  Different approaches to Noncommutative Geometry
- WG3 – Gravity Models:
  Quantum Gravity, String Theory and Loop Quantum Gravity
- WG4 led by STSM Coordinator,
  WG5 led by Gender/Outreach Coordinator

Core Group

- Chair: Richard Szabo (United Kingdom)
  Vice-Chair: Paolo Aschieri (Italy)

- WG1 Leader: George Zoupanos (Greece)
  WG2 Leader: Branislav Jurco (Czech Republic)
  WG3 Leader: Harold Steinacker (Austria)
  WG4 Leader: Olaf Lechtenfeld (Germany)
  WG5 Leader: Mairi Sakellariadou (United Kingdom)

- WG1 Vice-Leader: Fedele Lizzi (Italy)
  WG2 Vice-Leader: Martin Schlichenmaier (Luxembourg)
  WG3 Vice-Leader: John Barrett (United Kingdom)

Working Group WG4

- Diffuse expertise across different geographical and disciplinary borders with organisation of 1–3 month visits
- Organise short courses at doctoral level
- Organise small meetings of Working Groups
- Oversee Calls for STSMs and applications; Calls for conferences inherent to program
- Coordinate general scientific **cross-disciplinary** activities of WG1–WG3: Workshops, Training Schools,
  Joint seminars/training courses for ECIs
- Prepare annual plan for MC meetings

Working Group WG5

- Outreach activities: Activities at Universities and Schools, involvement of ECIs
- Gender issues: "Girls' Days", "Women in Physics Days"
- Family compatibility, dual career options, life-work balance: Promote mobility for scientists and families
- Action Website: Knowledge Transfer, Dissemination Activities, Public Repository
- Mentoring/career advice to PG students

Timetable

Activity	Year 1				Year 2				Year 3				Year 4			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
WG1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
WG2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
WG3	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
WG4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
WG5	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Other Activities																
Inaugural meeting	•															
Establish MC, WGs	•															
Establish Work Plan	•															
Launch Web Site/Repository		•														
MC, WG meetings			•		•		•		•		•		•		•	
Mid-term Meeting								•								
Workshop			•				•				•					
Training School					•				•				•			
Outreach/Gender issue activities			•	•	•	•	•	•	•	•	•	•	•	•	•	•
Final conference															•	

Monitoring and evaluation of Action activities

- Core Group will engage in periodic meetings to evaluate outputs of Working Groups and attainment of goals
- WG leaders at each Annual Meeting give presentation where results obtained are checked with goals, progress achieved and problems encountered; next proposed aims discussed
- Track progress/problems on Action webpage (along with dates, documents, etc.)
- Student polls and other participant questionnaires: Opinions on Training Courses, Workshops, etc.; suggestions for improvement