Technological trends make it desirable to blend methods from many disciplines for dealing with non-linear phenomena and/or phenomena which are defined in a short range interval (either in the source variable, time-space, or in frequency). These localized problems can be treated with special modern tools from Mathematics, Chaos theory, or from Signal-Data Analysis where the sampling and modeling play a crucial role. Both the theoretical models and the applications will be considered, especially from the computational aspects, in any field of Modern Science and Applied Math (bio-mathematics, bio-informatics, medicine, nano-mechanics, economy, astrophysics, etc.). It is a technical session on theoretical and practical aspects of modelling suddenly emerging phenomena and on applications in physics, biology, medicine, which would have a large audience and it would be an opportunity of discovering new fundamental aspects using computer simulation (as virtual experiments).

The workshop- **COMPUTATIONAL ASPECTS OF SHORT RANGE PHENOMENA** would include (without being restricted) the following main topics:

1. **Logical and Ontological Aspects of Transformations** (formal logic, gedanken experiments)
2. **Technical and Computational Aspects for Pulse Measurements** (sampling procedures for estimating pulse parameters)
3. **Specific Dynamical Aspects of Suddenly Emerging Phenomena** (mathematical models for dynamics of pulses in physics and technics)
4. **Mathematical Aspects of Pulses Sequences and Time Series** (specific aspects of sequences of pulses and wavelets studied by a large-scale analysis)
5. **Wavelets Analysis, Stochastic Aspects and Applications** (application of stochastic methods in wavelets analysis and simulation of transitions in natural, biological and human sciences)