

Editoria - aprile 2017

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Il Nuovo Cimento, Vol. 39, N. 6 (2016)

Papers presented at the International Workshop on Multi facets of EoS and Clustering (IWM-EC 2016), GANIL (Caen) France, edited by *A. Chbihi, O. Lopez, A. Pagano, S. Pirrone, P. Russotto, G. Verde*.

Recent advances in experimental and theoretical research performed in the field of Heavy Ion Collisions (HIC) are presented. The study of fragmentation and clustering phenomena is enriched by the development of sophisticated theoretical calculations, mostly belonging to the category of transport theories. This volume traces back its main ideas to the fortunate days in early 2000 years when the CHIMERA and INDRA collaborations decided to introduce the IWM series of HI Conferences, recently updated to IWM-EC to include clustering phenomena and their interlinks to the nuclear equation of state. The workshop was very successful and the topics presented in this proceeding are of relevant importance in both theoretical physics and experimental methods.

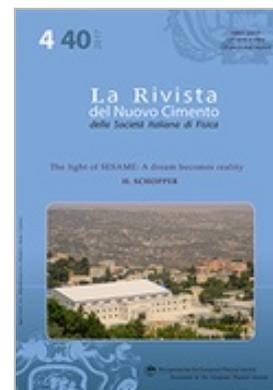


La Rivista del Nuovo Cimento, Vol. 40, N. 4 (2017)

The light of SESAME: A dream becomes reality

H. Schopper

The foundation of the international SESAME synchrotron laboratory in Jordan is described including political, technical, scientific and financial aspects. Following the model of CERN, its objective is not only to promote science but also bring people together from countries with different traditions, religions and mentalities. To create an international organisation in the Middle East and North Africa (MENA) region required sometimes quite unconventional procedures not disclosed in any official document. Because of the exceptional circumstances, a more detailed description of its history may be of interest. Although its success was doubted by many at its start, the facility will start operation in spring 2017.



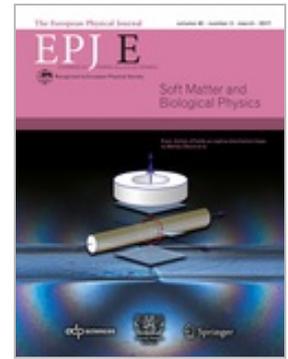
EPJ E – Highlights

Are midge swarms bound together by an effective velocity-dependent gravity?

A. M. Reynolds, M. Sinhuber, N. T. Ouellette

New study reveals swarm cohesion stems from an adaptive behaviour, where the faster individual midges fly, the stronger the gravitational-like force they experience. Ever wondered what makes the collective behaviour in insect swarms possible? Andy Reynolds from Rothamsted Research, UK, and colleagues at Stanford University, California, USA, modelled the effect of the attraction force, which resembles Newton's gravity force, acting towards the centre of a midge swarm to give cohesion to their group movement. In a recent study published in EPJ E, their model reveals that the gravity-like attraction towards the heart of the swarm increases with an individual's flight speed. The authors confirmed the existence of such an attractive force with experimental data.

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EPJ Plus – Highlights

Is there a resting frame in the universe? A proposed experimental test based on a precise measurement of particle mass

Donald C. Chang

Donald Chang attempts to elucidate whether the universe has a resting frame. The results have recently been published in EPJ Plus. For this tricky question, he has developed an experiment to precisely evaluate particle mass. This is designed to test the special theory of relativity that assumes the absence of a rest frame, otherwise it would be possible to determine which inertial frame is stationary and which is moving. This assumption, however, appears to diverge from the standard model of cosmology, which assumes that what we see as a vacuum is not an empty space. The assumption is that the energy of our universe comes from the quantum fluctuation in the vacuum.

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