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Personalia

Bertrand Berche's 50th birthday

A story from scientific folklore mentions two principal types of scientists. Scientists of the first type follow a ballistic approach in their research: they go far in a chosen direction, but the area they cover is negligibly small. Scientists of the second type follow a diffusive approach: they try to look in different directions covering a broad area but they go nowhere. Fortunately, such categorizations have exceptions. Indeed, amongst our colleagues there are those who manage to go far in their studies, searching answers to different puzzles put by nature, no matter to which specific sub-field of physics these puzzles are traditionally attributed. Bertrand Berche, who this year celebrates his first jubilee is one of them. Statistical physics, conformal field theory, gauge fields in condensed matter physics, cosmology, complex networks, sociophysics, history and philosophy of physics, these are the fields in which he works.

Bertrand Berche was born on May 6, 1963 in Metz (France). He got his master degrees in physics and in applied physics in 1987 from Henri Poincaré University of Nancy, continuing studies at this university as a PhD postgraduate student and defended his doctoral dissertation under the supervisorship of Loïc Turban there in 1991. Since then, he has been working at this university which is now a part of the University of Lorraine: first as an associate professor (PRAG, maître de conférences, 1990–1998) and after the habilitation (1997) since 1998 as a professor. In June 2013 Bertrand was promoted to professeur exceptionelle and although he might be feeling a little old on reaching fifty, he is one of the *youngest* professors to achieve this distinction.

However, he started teaching much earlier: in 1981–1990, parallel to the university studies he was appointed to different school teacher duties (elève-instituteur, instituteur, professeur certifié, agrégé). In 2004–2005 he was an invited researcher at the Center of Advanced Studies of the Venezuelan Institute for Scientific Studies (IVIC, Caracas, Venezuela) and in 2008–2011 he was president of the Condensed Matter Section of the National Council of Universities (CNU, France) – a national body in charge of the qualification, recruitment and careers of university professors. Since 2008 he is Director of the Department of Physics and Mechanics at the University of Lorraine.

The principal field of Bertrand Berche's research, which he initiated already in his PhD thesis and continues to carry on up till now, concerns phase transitions and criticality in their different incarnations. His studies shed light on the changes in the critical behaviour of various two- and three- dimensional systems under the effect of structural disorder, inhomogeneities, aperiodicity, space confinement. In this way, the theoretical description of transitions of various type (nematic – isotropic liquid, para-ferromagnetic, BKT-like) was suggested and verified by careful numerical simulations. More recently he made important contributions to the theory of spin transport in semiconductors, analyzing compounds with strong spin-orbital coupling and applying gauge symmetry to characterize topological aspects of such systems. Mastering the tools of statistical physics and numerical simulations as well as the framework of universality has also lead him to the application of these tools to the systems consisting of many agents of non-physical nature. In particular, the application of the complex network and percolation theory together with numerical simulations made it possible to perform the analysis of the vulnerability of public transportation systems of major cities of the world. In another study, he made a statistical analysis of the evaluation of university research groups as well as an impact of a research group size on the effectiveness of its work. It is needless to say that performing all this impressive work he collaborated with numerous colleagues and taught the younger generation. These are too numerous just to mention all of them, but nowadays it can be easily done using scientometric tools, another field of science which also evolves due to Bertrand Berche's work!

Many interesting and promising activities in the university and physics community are due to Bertrand's initiative or support. These are, just to mention some most important, French-German doctoral college where young physicists can do their PhD studies that lead to doctoral diplomas of two different universities (now England and Ukraine will also join this college), Atelier Nancy, which became already the traditional meeting in Statistical Physics and Low Dimensional Systems; Seminar Cathie Dufour – an annual interdisciplinary meeting of natural scientists, philosophers, historians of science and mathematicians which is organized annually in Nancy. He is one of the editors of the "Condensed Matter Physics" journal and a member of an international advisory board of the series of the Conferences of the Middle European Cooperation in Statistical Physics (MECO) which has currently become one of the most prestigious meetings in the field of Statistical Physics in a broader sense, including interdisciplinary applications. Currently he is involved as a principal partner in several research projects on national and international scale, closely collaborating with research groups in France, Hungary, Germany, England, Italy, Ukraine, Russia, Venezuela, Brazil, Mexico.

Lecturing in solid state physics to students in Mauritania or organizing summer school in statistical and mesoscopic physics for young scientists in Venezuela, initiating common diploma studies between France, Germany, and Luxembourg or co-supervising PhD with partner universities from England, Venezuela, Ukraine – whatever Bertrand Berche is occupied with, he always serves for many of his colleagues and friends as a perfect image of his country: forever young, always active and open to new challenges, rejecting stereotypes and looking for new ways of tackling the challenging problems. At this point on behalf of his friends, colleagues and the community at large, it is appropriate to celebrate Bertrand Berche's jubilee and to wish him continued success on his way.