

Barbu-Rudolf Berceanu

Adress:

Institute of Mathematics of the Romanian Academy,
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Present position:

Senior researcher

Field of specialization:

Topology

Studies

- Ph.D. 1995, University of Bucharest
- Ph.D. 1995, University Paris 7

Professional activities

- Secondary school *Autobuzul* (Bucharest), teacher, 1975-1981
- *National Institute for Scientific Creation (INCREST)*, junior researcher, 1982-1984
- *INCREST*-Bucharest, researcher, 1984-1990
- [*Institute of Mathematics of the Romanian Academy*](#) (Bucharest), researcher, 1990-1996
- *Institute of Mathematics* (Bucharest), senior researcher, 1996-
- Member of the scientific committee of the Institute, 1994-
- Research grant from the University of Paris VII (april-september 1993)
- Invited researcher at Sydney University (1996)
- Invited for teaching and research at the University *Joseph Fourier*, Grenoble (february-june 1998)

Research activities

- Applications of the rational homotopy theory:
 - Rational homotopy of the algebraic varieties [1,2]
 - Serre's problem for low dimensional manifolds [4,5,9]
 - Rigidity of the fundamental group [7,8,9]
 - Rigidity of the pure braid group [9]
- Word problem and conjugacy problem in the braid group [10]

- Topology of the affine Cremona group [12]
 - Teaching (University of Bucharest)
 - *Algebraic topology* - introductory course
 - *Differential topology* - introductory course
 - *Differential geometry* - introductory course
 - *Spectral sequences - applications in topology*
 - *Lie groups and Lie algebras*
 - *Global Riemannian geometry*
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List of publications

1. *Homotopy of Hodge algebras* (Romanian), INCREST 1984
2. *Formal algebraic varieties* (Romanian), INCREST 1985
3. *Morse functions on open manifolds* (Romanian), INCREST 1986
4. *Hilton-Steer-like formulae* (Romanian), INCREST 1987
5. *Hilbert series of Hopf algebras* (Romanian), INCREST 1988
6. *Classification of maximal rank subalgebras in compact Lie algebras* (Romanian), INCREST 1989
7. *Semisimple Lie algebras* (Romanian), Institute of Mathematics, 1991 (with M. Martin and S. Papadima)
8. *Cohomologically generic 2-complexes and 3-dimensional Poincaré complexes*, Math. Ann. 298 (1994), 457-480 (with S.Papadima)
9. *Moduli-spaces for generic low dimensional complexes*, J. Pure Appl. Alg. 95 (1994), 1-25 (with S.Papadima)
10. *Artin algebras - applications in topology* (Romanian), Ph.D.-University of Bucharest, january 1995
11. *Homotopie rationnelle des espaces de petite dimension*, Ph.D.-University Paris VII, december 1995; Stud. Cerc. Mat. T. 47, 2 (1995), 99-178
12. *The topology of polynomial varieties*, Report 96-35, School of Mathematics and Statistics, University of Sydney, 1996, in press

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