# CURRICULUM VITAE

**Name :** Petr Somberg

**Nationality :** Czech Republic

**Education :**

- 1977-1985 - Primary school, Kacov, Czech Republic,
- 1985-1989 - Grammar school - Gymnasium W.Piecka, Prague, Czech Republic,
- 1989-1994 - Charles University - Faculty of Mathematics and Physics, Prague, Czech Republic.
- 1994-97 - Postgradual study at the Faculty of Mathematics and Physics, specialization - Geometry and global analysis, Prague, Czech Republic.
- 2000- Research Assistant, Faculty of Mathematics and Physics of Charles University, Prague, Czech Republic.
- Military Service: 1997 - 1999 - Military service in the civil sector - network administrator, PC-user support, Faculty of Mathematics and Physics, 18 months.

**Teaching experiences in various areas of Mathematical Analysis, Algebra, Geometry and Topology:**

- Mathematical Analysis - basic calculus courses
- Linear Algebra and Geometry
- Differential Geometry of Curves and Surfaces
- Integral Geometry
- Analysis on Manifolds
- Introduction to Lie Group Theory
- Representation theory
- Algebraic Topology
- Algebraic Geometry, Algebraic Geometry in positive characteristic
- Elliptic Curves

During the period 2000-2013 organization of the seminars "Differential Geometry" and "Harmonic Analysis" in Mathematical Institute, Prague.

**Invitations, longer visits in the near past:**
ESI, Wien, 9/2012, University of Canberra, 9/2011.

**Short description of research interest:**
I am interested in a class of problems related to geometry, representation theory, analysis, algebraic topology and combinatorics. In particular, my research is centered around invariant theory of geometrical structures, e.g., (both differential and integral) intertwining operators associated to it. The main aim is to understand their spectral properties and specifically solution spaces, and their relationship to various local and global properties of the underlying manifold. I use the techniques

of invariant theory, sheaf theory and D-modules on the background of geometrical calculus. For example, a class of geometries can be described by parabolic invariant theories (i.e., parabolic geometries) in the framework of the so called Cartan's program. Then one of the main organizing principles is the collection of Bernstein-Gelfand-Gelfand sequences as a class of more convenient and effective analogues of the de Rham complex.