IMPANGA 2000-2015

Let us start with the explanation of the meaning of the name "IMPANGA". It comes from the two names in Polish:

IMPANGA = IM PAN Geometria **A**lgebraiczna

At the beginning, in 2000, it was just the name of a new seminar on algebraic geometry at IM PAN, invented by the author of the present note. Nowadays, the activities of IMPANGA are much wider; in fact, IMPANGA is an algebraic geometry environment, organizing mathematical events (i.e. the seminar, schools, workshops etc.) and editing IMPANGA Lecture Notes. Mathematicians related to IMPANGA are mainly interested in complex algebraic geometry. This is a classical area of algebraic geometry; here one attacks the key problems of geometry and related important problems of algebra and combinatorics. The IMPANGA Seminar meets each second week at IM PAN in Warsaw for two sessions, and the participants come from all around Poland and abroad. This is a research seminar with lectures in English. The speakers at the IMPANGA Seminar have included: J.P. Brasselet, S. Capell, H. Duan, H. Esnault, L. Gruson, F. Hirzebruch, L. Katzarkov, V. Kiritchenko, A. Lascoux, V. Lazić, V. Mehta, M. Oka, T. Peternell, C. Ranestad, B. Totaro and J. Włodarczyk. For a detailed program of the seminar, see the home page of IMPANGA:

`http://www.impan.pl/~pragacz/impanga.htm`

The following areas of algebraic geometry have been represented at IMPANGA: complex algebraic geometry (both projective and affine), vector bundles, moduli spaces (of vector bundles, curves and abelian varieties), intersection theory and enumerative geometry, classical algebra and combinatorics, Schubert calculus, singularities and especially the global theory of singularities, analytic geometry and local algebra, algebraic topology, geometry and topology of surfaces, Calabi-Yau manifolds, K-theory, symplectic geometry and topology, abelian varieties, arithmetic algebraic geometry, algebraic geometry in positive characteristic and others.

IMPANGA has organized conferences, schools, minischools, workshops, research groups, sessions and summer seminars. At the Banach Center in Warsaw, the following schools took place: *Characteristic classes* (2002), *Stratifications of moduli spaces* (2002), *Schubert varieties* (2003), *Symplectic topology* (2004), *Moduli spaces* (2005), *Holomorphic symplectic singularities* (2006). Also, the Center hosted the sessions: *Hommage à Grothendieck* (2004), *Algebraic cycles and motives - IMPANGA 100* (2005), *In honor of Hoene-Wroński* (2007), *Zeta functions* (2007), and research groups: *Classical algebra, combinatorics and Hoene-Wroński* (2008), *Thom polynomials and the Green-Griffith conjecture* (2011), *The ubiquity of Wrońskians* (2011), *Okounkov bodies and Nagata type conjectures* (2013), *The geometry of homogeneous varieties* (2013), *Abelian varieties* (2014). For more details, see the above mentioned web page. In 2003, IMPANGA organized jointly with the Institutes of Mathematics of Bulgarian and Romanian Academies of Science the conference *Algebraic geometry, algebra and applications* in Borovetz (Bulgaria). IMPANGA also contributed in various

ways to algebraic geometry conferences and schools organized in Poland, e.g., *Manifolds in mathematics and in other fields* (IM PAN, 2002; organized by F. Hirzebruch and S. Janeczko), and *Okounkov solids*, organized by T. Szemberg at the Pedagogical University in Cracow, 2011.

The two largest events, organized by IMPANGA at the Banach Center in Będlewo, were: *Impanga summer school on algebraic geometry* (2010):

`http://www.impan.pl/~impanga/school/`

and the Conference *IMPANGA 15* (2015):

`http://www.impan.pl/~impanga15/`

The former event was devoted to Prym varieties and their moduli, moduli spaces of curves and abelian varieties, differential forms and applications to moduli, K3 and Enriques surfaces, invariants of singularities in birational geometry, minimal model program, toric varieties and equivariant cohomology. The latter conference was mainly devoted to Chern class formulas for degeneracy loci, equivariant cohomology of flag varieties, moduli spaces of abelian varieties and surfaces, classes of singular varieties, Thom polynomials, tropical algebraic geometry and its applications, geometry in positive characteristic and filtrations of B-modules.

The lecturers at the conferences, schools and workshops of IMPANGA have included (apart from the speakers at the Seminar mentioned above): K. Altmann, P. Aluffi, D. Anderson, G. Bérczi, M. Brion, A. Buch, P. Cascini, C. Ciliberto, I. Coskun, J.M. Drezet, G. Farkas, G. van der Geer, T. Gómez, B. Harbourne, J. Huh, J.M. Hwang, M. Kazarian, S. Kebekus, J. Keum, M. Lehn, R. Miranda, S. Mukai, J. P. Murre, M. Mustaţă, T. Ngô Dac, K. Ono, R. Rimányi, F. Russo, A.H.W. Schmitt, F.O. Schreyer, J. Schürmann, V. Srinivas, H. Tamvakis and M. Vlasenko.

The meetings of IMPANGA inspired many papers; in particular, they inspired 15 papers of the author of the present note.

Apart from those already mentioned, the mathematicians contributing to IMPANGA (in various ways) include: P. Achinger, J. Adamus, G. Banaszak, M. Borodzik, P. Borówka, W. Buczyńska , J. Buczyński, M. Chałupnik, P. Chojecki, S. Cynk, M. Donten-Bury, M. Dumnicki, Ch. Eyral, L. Gatto, K. Han, Z. Jelonek, G. Kapustka, M. Kapustka, P. Karwasz, J. Kass, J. Kędra, O. Kędzierski, M. Koras, A. Küronya, S. Kwak, A. Langer, T. Maszczyk, M. Michałek, Ö. Özturk, K. Palka, E. Postinghel, S. Rams, I. Scherbak, T. Szemberg, J. Szpond, M. Szyjewski, H. Tutaj-Gasińska, B. Wajnryb, A. Weber and J. Wiśniewski.

IMPANGA edited the following lecture notes: *Topics in cohomological studies of algebraic varieties* (Birkhäuser 2005), *Algebraic cycles, sheaves, shtukas, and moduli* (Birkhäuser 2007), *Hoene-Wroński: życie, matematyka i filozofia* (in Polish, IM PAN 2008) and *Contributions to algebraic geometry* (EMS Publishing House, 2012). The next volume of IMPANGA Lecture Notes is in preparation.

Long live IMPANGA!

Piotr Pragacz, April 2015