



**RULES GOVERNING THE AWARD OF THE
FERMAT PRIZE FOR MATHEMATICS RESEARCH**

Abridged english version

2009 AWARD



Toulouse, June 2008

Article I

Agreement was reached to institute a **Fermat Prize for Mathematics Research**, created by Paul Sabatier University (University of Toulouse III, France). The amount of the Fermat Prize 2009 has been fixed at 20 000 Euros.

Article II - Objectives

The Fermat Prize rewards the research work of one or more mathematicians in fields where the contributions of Pierre de Fermat have been decisive:

- * **Statements of Variational Principles,**
- * **Foundations of Probability and Analytical Geometry,**
- * **Number Theory.**

The spirit of the prize is focused on rewarding the results of research accessible to the greatest number of professional mathematicians within these fields. Thus work - even of a brilliant level - the comprehension, interest and usefulness of which are the prerogative of a restricted number of specialist mathematicians cannot be considered.

The following will be considered:

- * preferably recent results or groups of results (less than five years old)
- * younger candidates (rule : aged less than 45 years at the time of the submission).

The Fermat Prize is awarded to one or more mathematicians designated by name, and not to research groups or laboratories.

Article III - Organisation

The Fermat Prize is awarded once every two years in Toulouse (it started in 1987); the eleventh award will be announced in **2009**.

The presentation of the prize to the winner or winners takes place in two stages:

- a lecture delivered by the winner(s) on the premises of Paul Sabatier University dealing with the prize-winning work;
- a prize-awarding ceremony under the aegis of the Paul Sabatier University.

The recipient(s) are required to publish an article summarising their findings in the mathematical journal Annales de la Faculté des Sciences de Toulouse; the aim of this paper, addressed to professional mathematicians not necessarily experts in the subject, is to explain the significance of the results of the research rewarded by the Prize.

Article IV - Jury Composition

The Fermat Prize Jury will be composed of:

- a representative of Académie des Sciences de Paris;
- a representative of the European Mathematical Society (E.M.S.);
- a representative of the French Mathematical Society (S.M.F.);
- a representative of the French Society of Applied and Industrial Mathematics (S.M.A.I.);
- a representative of the Scientific Committee of Paul Sabatier University;
- three members of the Editorial Board of the Annales de la Faculté des Sciences de Toulouse;
- three mathematicians from Paul Sabatier University, chosen by Institut de Mathématiques de Toulouse;
- a representative of the Midi-Pyrénées Region.

The composition of the Jury is decided every two years.

Article V - Role and Fields of Competence of the Jury

The Jury's decisions are final and will be made public following their deliberations. The Jury can decide to award no Prize if it considers that the candidacies presented do not justify the attribution of the Prize.

In no circumstances can members of the Jury themselves be candidates.

The decision of the Jury is final in the event of any question of application or interpretation of the rules, or any question not covered by the latter should it come up during the present competition. Its decisions are without appeal.

Article VI - Application Formalities

The application file can be completed and submitted by:

- the candidate him/herself;

or by

- a mathematician wishing to "sponsor" the candidacy of another, and who would complete the candidacy dossier on his/her behalf (without the candidate necessarily being aware of it).

- * closing date for application: **30 June 2009**
- * declaration of the results: October 2009.

The sending off of the registration form implies the unconditional acceptance of these rules by the candidate or the sponsor.

The management and administration of dossiers will be the responsibility of Paul Sabatier University. The application must be written in French or English, excluding all other languages.

Applications are to be sent to the organising secretariat of the Fermat Prize:

Prix Fermat de Recherche en Mathématiques 2009
Service Communication – Administration Centrale
Université Paul Sabatier
31062 TOULOUSE Cedex 9 , France.

<http://www.math.univ-toulouse.fr/2-16194-Fermat-Prize.php>

1989 Award

The Fermat Prize for Mathematics Research 1989 was awarded jointly to:
Mr **Abbas Bahri** for *the introduction of new methods in the Calculation of Variations*
Mr **Kenneth A Ribet** for *his contribution to Number Theory and Fermat's last Theorem.*

1991 Award

The Fermat Prize for Mathematics Research 1991 was awarded to:
Mr **Jean-Louis Colliot-Thélène** for *his work on Number Theory and rational manifolds*
the research for which was undertaken to a large extent with Mr Jean-Jacques Sansuc.

1993 Award

The Fermat Prize for Mathematics Research 1993 was awarded to:
Mr **Jean-Michel Coron** for *his contributions to the study of Variational Problems and Control Theory.*

1995 Award

The Fermat Prize for Mathematics Research 1995 was awarded to:
Mr **Andrew J. Wiles** for *his works on Shimura-Taniyama-Weil's conjecture which resulted in the demonstration of Fermat's last Theorem.*

1997 Award

The Fermat Prize for Mathematics Research 1997 was awarded to:
Mr **Michel Talagrand** for *his fundamental contributions in various domains of Probability.*

1999 Award

The Fermat Prize for Mathematics Research 1999 was awarded jointly to:
M. **Fabrice Bethuel** and **Frédéric Helein** for *several important contributions to the theory of variational calculus, which have consequences in Physics and Geometry.*

2001 Award

The Fermat Prize for Mathematics Research 2001 was awarded jointly to:
M. Richard L. Taylor for *his various contributions to the study of links between Galois representations and automorphic forms*
M. Wendelin Werner for *his works on the intersection exponents of Brownian motion and their impact in theoretical Physics.*

2003 Award

The Fermat Prize for Mathematics Research 2003 was awarded to:
Professeur Luigi AMBROSIO (Scuola Normale Superiore, Pisa, Italie) for *his impressive contributions to the Calculus of Variations and Geometric Measure Theory, and their link with partial differential equations.*

2005 Award

The Fermat Prize 2005 for Mathematics Research has been awarded jointly to:

Pierre COLMEZ for his contributions to the study of L functions and p-adic Galois representations.

Jean-François LE GALL for his contributions to the fine analysis of planar Brownian motion, his invention of the Brownian snake and its applications to the study of non-linear partial differential equations.

2007 Award

The Fermat Prize 2007 for Mathematics Research has been awarded to:

Chandrashekar KHARE for the proof in collaboration with Jean-Pierre Wintenberger of Serre's modularity conjecture in number theory.

APPLICATION

1. Detailed curriculum vitae and academic record of the candidate.
2. List of publications, including works not connected with candidacy to the Prize.
3. A summary of research work which would justify the award of the Prize.

To back up this presentation, the following could also be appended:

- copies of work published in international journals;
- confidential opinions of personalities from the world of Mathematics as to the content, range and usefulness of the results presented by the candidate.

These documents are non-returnable.

4. A handwritten statement by the candidate or sponsor attesting to the truthfulness of the material supplied, and to the authenticity of the documents and other information provided.
5. Closing date for dossiers for the 2007 Fermat Prize: **30 June 2009.**
6. Results: **October 2009.**
7. Presentation in Toulouse, and Prize Award ceremony: Spring 2010.