# The Leonhard Euler Tercentenary 2007




Leonard Euler was born in Basel on the 15th of April 1707. Therefore 2007 is declared to be an Euler year. There are several events organized at several places on this occasion. For example at the site `euler-2007.ch` you can find several activities, some of them have already passed, others are planned later this year. There are too many to list them all here. I just mention that there are exhibitions, symposiums, films, concerts (Euler has tried hard to incorporate music theory as a part of mathematics), etc. Several conferences are organized. For example in Basel in September, in St. Petersburg in June (Euler died in St. Petersburg on 18 September 1783) and the US based Euler Society organizes one in August in San Jose. The Math. Assoc. of America is even organizing a tour to Basel, St. Petersburg and Berlin (another place where Euler spent about 25 years of his life).

Birkhäuser published a comic strip *Leonhard Euler A Man to Be Reckoned with* by Andreas and Alice Heyne, (2007, 45 p., Hardcover ISBN: 978-3-7643-8332-9), or in German *Leonhard Euler: Ein Mann, mit dem man rechnen kann* ISBN: 978-3-7643-7779-3.

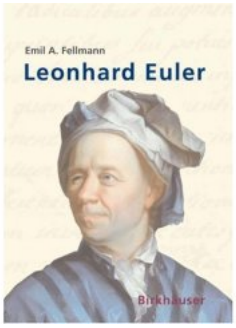
Also the biography *Leonhard Euler* by E.A. Fellmann, which appeared originally in German in 1995, was just published in an English version (translation by Erika and Walter Gautschi) by Birkhäuser in 2007, (179 p., 58 illus., Hardcover, ISBN: 978-3-7643-7538-6)




*Leonhard Euler comic strip*

A special stamp has been brought out in Switzerland.

The influence of Euler on mathematics and physics has of course been enormous. The very long list of topics named after Euler on wikipedia `en.wikipedia.org/wiki/List_of_topics_named_after_Leonhard_Euler` is a proof already. There are of course many mathematical Euler-terms, but did you know that the following things were named after Euler: The Euler latex font (in which this text is typeset), the Euler craters on the moon, the 2002 Euler astroid, the Euler programming language, and of course there is an Euler street in Paris, and an Euler hotel in Basel, and I am sure there will be many restaurants and bistros in Basel, St. Petersburg or Berlin called after Euler, and I should probably mention all the computers having Euler as their pet name.







*Eulers biography published by Birkhäuser*
*New Swiss stamp dedicated to Euler*

Euler was one of the most prolific mathematicians of all time. The publication of his *Opera Omnia* was started in 1911 and has not been finished yet. you must certainly have a look at `www.eulerarchive.org` where you can find (and read) most of Euler's work in the original form (mostly in Latin).

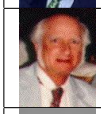
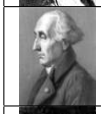
Does Euler belong to your scientific genealogy? Now is an appropriate time to look it up. I did, and low and behold, I am an intellectual descendant from Euler indeed, as probably many of you are too.

To find that out, you should check out the web site `genealogy.math.ndsu.nodak.edu` of the Mathematical Genealogy Project (MGP) and look up who your advisor's advisor's ... advisor is. You may, as I did, eventually end up hitting upon Euler's name. Being linked to Euler in this way is probably much more frequent than having a low Erdös number. I am certainly not the only one having Euler among his scientific ancestors. According to the MGP, Euler had only Lagrange as a student, but there are 41194 descendants who are students of students of students ... and the MGP is far from complete. Thus, because of many missing links, this number is most probably considerably larger.

The following table shows how, according to the MGP, I am linked to Leonhard Euler. The rule is that my advisor was P. Dewilde, whose advisor was R. Newcomb etc. I also mention in what year and where the PhD was obtained.

I am not a historian and I never did a thorough search but I wonder if somebody can fill in the gaps.

The thesis of Ernst Guillemin is not given on the MGP pages, nor on the many web pages sketching his life. Paul Levrie did find a title mentioned in a slide of a presentation by R. Seising, but since it also happens to be the title of a paper from 1926, correctness is not guaranteed.

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|---|---|---|
|  | A. Bultheel | 1979 K.U.Leuven<br>Recursive Rational Approximation |
|  | P. Dewilde | 1970 Stanford Univiversity<br>Cascade Scattering Matrix Synthesis |
|  | R. Newcomb | 1960 University California, Berkeley<br>Synthesis of Non-Reciprocal and Reciprocal Finite Passive 2n-Poles |
|  | C. Desoer | 1958 Massachusetts Institute of Technology<br>Communication Through Channels in Cascade |
|  | R. Fano | 1947 Massachusetts Institute of Technology<br>Theoretical Limitations on the Broadband Matching of Arbitrary Impedances |
|  | E. Guillemin | 1926 Ludwig-Maximilians Universität München<br>Zur Theorie der Frequenzvervielfachung durch Eisenkernkopplung |
|  | A. Sommerfeld | 1891 Universität Königsberg<br>Die willkürlichen Functionen in der mathematischen Physik |
|  | C.L.F. Lindermann | 1873 Friedrich-Alexander Universität Erlangen-Nürnberg<br>Über unendlich kleine Bewegungen und über Kraftsysteme bei allgemeiner projektivischer Maßbestimmung |
|  | C.F. Klein | 1868 Rheinische Friedrich-Wilhelms-Universität Bonn<br>Über die Transformation der allgemeinen Gleichung des zweiten Grades zwischen Linien-Koordinaten auf eine kanonische Form |
|  | R. Lipschitz | 1853 Universität Berlin<br>Determinatio status magnetici viribus inducentibus commoti in ellipsoide |
|  | G. Dirichlet | 1827 Rheinische Friedrich-Wilhelms-Universität Bonn<br>Partial Results on Fermat's Last Theorem, Exponent 5 |
|  | J.B. Fourier | |
|  | J.L. Lagrange | no degree |
|  | L. Euler | 1726 Universität Basel |

The bottom part is a bit tricky, and it raises further questions. Gustav Peter Lejeune Dirichlet got his PhD in Germany, but he studied with Poisson and Fourier before he returned to Bonn. So he can be considered to be a student of these. Jean-Baptiste Joseph Fourier was taught by Lagrange, but the St.-Andrews history pages do not mention a PhD. I guess he never produced one. Joseph Louis Lagrange never got a degree, but he certainly studied the work of Leonhard Euler.

Plücker was another advisor of Klein, and that would lead me to his advisor who was Carl Friedrich Gauss.

Adhemar Bultheel