



## Prof. Edward Witten Professor



### **Most important awards, prizes and academies**

Dirac Medal, International Center for Theoretical Physics, 1985; Alan T. Waterman Award, National Science Foundation, 1985; Fellow, U.S. National Academy of Sciences, 1987; Fields Medal, International Union of Mathematicians, 1990; Dannie Heineman Prize, American Institute of Physics, 1998; Foreign Member of the Royal Society, 1998; Klein Medal, Stockholm University, 1998; Nemmers Prize in Mathematics, Northwestern University, 2000; Associate Membership of the Academy of Sciences of Paris, 2000; Shalom Award, Americans for Peace Now, December 2002; National Medal of Science, November 2003; Premio Pitagora, Crotone, Italy, 2005; Harvey Prize, the Technion, Israel, 2006; Poincaré Prize, International Association of Mathematical Physics, 2006; Crafoord Prize in Mathematics, The Royal Swedish Academy of Sciences, 2008; Honorary Citizen of Padua, Italy, 2009; Lorentz Medal, Royal Dutch Academy of Sciences, 2010; Newton Medal, Institute of Physics, July 2010; Solomon Lefschetz Medal, Mathematical Society of Mexico, October 2011; Fundamental Physics Prize, The Milner Foundation, July 2012; Fellow, American Mathematical Society, January 2013; Kyoto Prize, Inamori Foundation, November 2014; Medal for Exceptional Achievement in Research, American Physical Society, 2015; Honorary Fellow, Royal Society of Edinburgh, 2016; Honorary Doctorate, University of the Chinese Academy of Sciences, 2016.

## Summary of scientific research

Prof. Witten's research interests are in elementary particle physics, quantum field theory, and string theory. He is known for his work on dark matter detection, the behaviour of four-dimensional gauge theories, the applications of quantum field theory to mathematics, and for a variety of contributions to string theory.

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## Latest publications

Author of over 300 scientific papers. Ultralight scalars as cosmological dark matter, L. Hui, J. Ostriker, S. Tremaine, E. Witten, Oct 2016, 32pp, *Phys.Rev.D* 95 (2017) 4; Axions In String Theory, P. Svrcek, E. Witten, May 2006, 62pp, *JHEP* 06 (2006) 051; Electric-Magnetic Duality and The Geometric Langlands Program, A. Kapustin, E. Witten, Apr 2006, 225pp, *Commun.Num.Theor.Phys.* 1 (2007) 1-236; Direct proof of tree-level recursion relation in Yang-Mills theory, R. Britto, F. Cachazo, B. Feng, E. Witten, Jan 2005, 8pp, *Phys.Rev.Lett.* 94 (2005) 181602; MHV vertices and tree amplitudes in gauge theory, F. Cachazo, P. Svrcek, E. Witten, Mar 2004, 27pp, *JHEP* 09 (2004) 006; Perturbative gauge theory as a string theory in twistor space, E. Witten, Dec 2003, 97pp, *Commun.Math.Phys.* 252 (2004) 189-258; String theory and noncommutative geometry, N. Seiberg, E. Witten, Aug 1999, 99pp, *JHEP* 09 (1999) 032, In \*Li, M. (ed.) et al.: Physics in non-commutative world\* 327-401; CFT's from Calabi-Yau four folds, S. Gukov, C. Vafa, E. Witten, Jun 1999, 49pp, *Nucl.Phys.B* 584 (2000) 69-108, *Nucl.Phys.B* 608 (2001) 477-478 (erratum); AdS / CFT correspondence and symmetry breaking, Igor R. Klebanov, E. Witten, May 1999, 27pp, *Nucl.Phys.B* 556 (1999) 89-114; Superconformal field theory on three-branes at a Calabi-Yau singularity, I. R. Klebanov, E. Witten, Jul 1998, 21pp, *Nucl.Phys.B* 536 (1998) 199-218; Anti-de Sitter space, thermal phase transition, and confinement in gauge theories, E. Witten, Mar 1998, 27pp, *Adv.Theor.Math.Phys.* 2 (1998) 505-532; Anti-de Sitter space and holography, E. Witten, Feb 1998, 39pp, *Adv.Theor.Math.Phys.* 2 (1998) 253-291; Solutions of four-dimensional field theories via M theory, E. Witten, Mar 1997, 47pp, *Nucl.Phys.B* 500 (1997) 3-42; Type IIB superstrings, BPS monopoles, and three-dimensional gauge dynamics, A. Hanany, E. Witten, Nov 1996, 44pp, *Nucl.Phys.B* 492 (1997) 152-190; Eleven-dimensional supergravity on a manifold with boundary, P. Horava, E. Witten, Mar 1996, 24pp, *Nucl.Phys.B* 475 (1996) 94-114; String theory dynamics in various dimensions, E. Witten, Mar, 1995, 56pp, Part of The World in eleven-dimensions: A Tribute to Oskar Klein, *Nucl.Phys.B* 443 (1995) 85-126; Monopole Condensation, And Confinement In N=2 Supersymmetric Yang-Mills Theory, N. Seiberg, E. Witten, 1994, 45pp, *Nucl.Phys.B* 426:19-52,1994; Erratum-ibid.B430:485- 486, 1994.