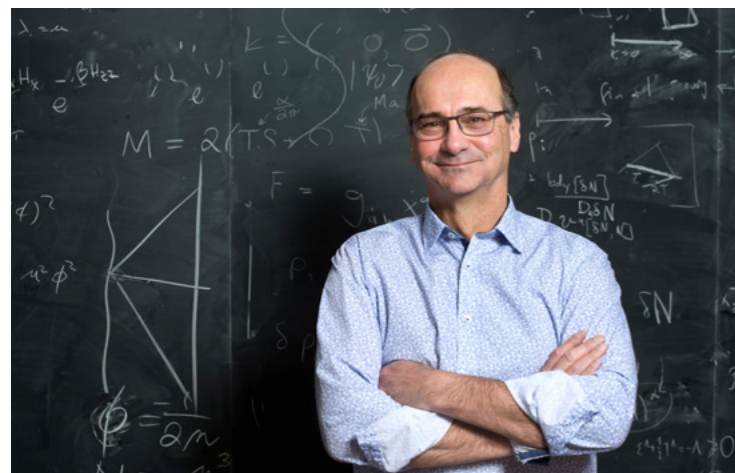


HERTZ LECTURE.

DESY Lecture on Physics 2023

Why We Explore

Prof. Dr. Robert Myers



Thursday, September 28, 17:30 h

DESY main auditorium

<https://webcast.desy.de>

Deutsches Elektronen-Synchrotron DESY
A Research Centre of the Helmholtz Association

Cosmic F- and D-strings

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Humanity faces real and present problems. Our resources to address these problems are limited. It's easy to think, then, that we should devote ourselves to our most promising solutions.

It's easy, but it's wrong.

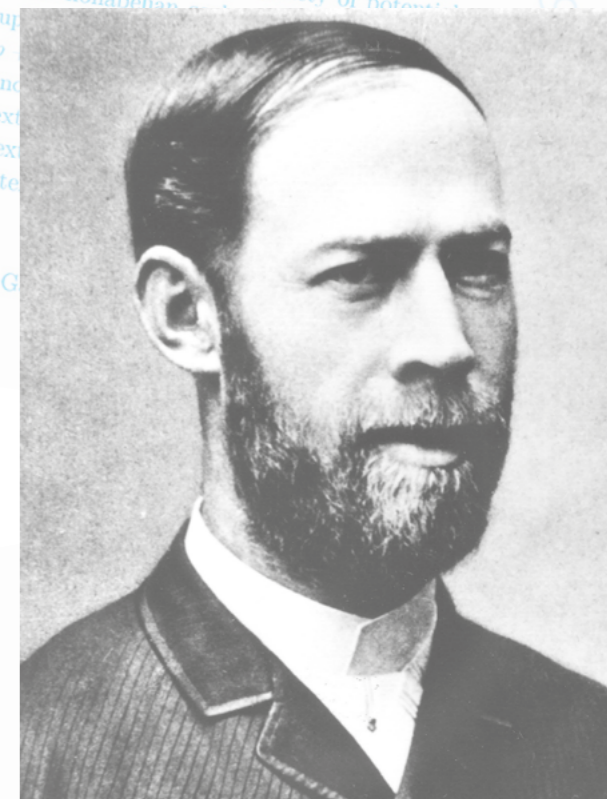
The great paradox of scientific research is that pure exploration – research into deep questions motivated by pure curiosity, without concern for applications – is ultimately what transforms our lives in tangible, practical ways.

In this talk, I will speak not just as a physicist interested in puzzles of quantum entanglement and five-dimensional black holes, but as the director of an institute devoted to fundamental research. I make the case for blue-sky research, and for optimism about our shared future.

Dielectric-branes

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ABSTRACT: We extend the usual world-volume action for a Dp -brane to the case of N coincident Dp -branes where the world-volume theory involves a $U(N)$ gauge theory. The guiding principle in our construction is that the action should be consistent with the familiar rules of T-duality. The resulting action involves a variety of nonabelian terms, i.e. nonderivative interactions, for the nonabelian gauge fields. We also show that Dp -branes naturally couple to p -forms and smaller than p -forms. We also show that Dp -branes naturally couple to p -forms and smaller than p -forms. We also show that Dp -branes naturally couple to p -forms and smaller than p -forms.



Heinrich Hertz

1857 Hamburg-Karlsruhe-Bonn 1894

Black Holes in Higher Dimensional Space-Times

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ABSTRACT: Black hole solutions to Einstein's equations are examined in asymptotically flat $N+1$ dimensional space-times. First generalizations of Schwarzschild and Reissner-Nordström solutions are examined in a discussion of static black holes in $N+1$ dimensions. Then a new family of solutions is found which describe spinning black holes in higher dimensional space-times. These new solutions are similar to the familiar Kerr and Schwarzschild solutions for $N=3$. One exceptional case though is that for $N \geq 5$, black holes with non-zero angular momentum. © 1986 Academic Press.

