

## DISTINGUISHED LECTURE SERIES

# The Dirac-Ramond operator

**Professor Richard Melrose**  
Massachusetts Institute of Technology, USA

**26 August 2021 (Thursday)**  
**10–11am (GMT-4, Boston)**  
**10–11pm (GMT+8, Singapore)**

In this talk I plan to spend some time explaining the background to the definition of the Dirac-Ramond operator on the loop space of a string manifold. Since there is still quite a gap in the (or at least my) understanding of the analytic properties of this operator I will try to indicate what I believe remains to be done.

Richard Melrose is a Simons Professor of Mathematics at the Massachusetts Institute of Technology (MIT).

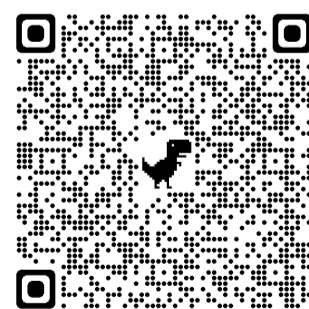
His research interests include geometric analysis, microlocal analysis, partial differential equations, and differential geometry.

Following a Research fellowship at St. John's College, Cambridge, he joined the MIT mathematics faculty in 1976. A specialist in PDEs and differential geometry, Professor Melrose received the Bôcher Prize of the AMS in 1984, "...for his solution of several outstanding problems in diffraction theory and scattering theory and for developing the analytical tools needed for their resolution." He was elected Fellow of the American Academy of Arts & Sciences in 1986 and received a Guggenheim fellowship in 1992. He was an invited speaker at the 1978 ICM in Helsinki and a plenary speaker at the 1990 ICM in Kyoto.

This talk is part of the Conference on Index Theory and Related Topics (23–27 August 2021)  
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