

Extreme Universe

The 17th COLLOQUIUM

June 6th (Tue.) ONLINE

TALK 19:00 - 20:00 (JST)

June 6th (Tue.) 11:00 - 12:00 (BST)

June 6 (Tue.) 10:00 - 11:00 (UTC)

ONLINE COFFEE TIME

20:00 - 21:00 (JST)

Registration required (click [HERE](#))

Extreme Universe, JAPAN



Speaker

Prof. Harvey Reall

University of Cambridge

Title

Creases, corners and caustics:
non-smooth features on black hole horizons

Abstract

The event horizon of a dynamical black hole is usually a non-smooth hypersurface. I shall describe the types of non-smooth structure that can arise on a horizon that is smooth at late time. This includes creases, corners and caustic points. I shall discuss "perestroikas" of these structures, in which they undergo a qualitative change at an instant of time. A crease perestroika gives an exact local description of the event horizon near the "instant of merger" of a generic black hole merger. Other crease perestroikas describe horizon nucleation or collapse of a hole in a toroidal horizon. I shall discuss the possibility that creases contribute to black hole entropy, and the implications of non-smoothness for higher derivative terms in black hole entropy. This talk is based on joint work with Maxime Gadioux.

2023

Collaboration