

1. Do not be scared of physics! Andrea spent many hours trying to make this presentation understandable to the general mathematical audience!

Come and see it for yourself, this should be a hit!

2. WKB are just 3 guys with a trick of solving some diff. equation. Unruh is another guy who described the effect that 'a thermometer waved around in empty space will record a non-zero temperature' (wiki).

Abstract:

Recently, it has been shown that the radiation arising from quantum fields placed in a gravitational background with a horizon (e.g. Hawking radiation) can be derived using a quasi-classical calculation.

This method consists of calculating the tunneling rate of the quantum field across the horizon, and it is based on the standard WKB approximation method from quantum mechanics. However, this approach has some distinct features due to the different character of time in general relativity versus quantum mechanics. Thus, the quasi-classical method for gravitational backgrounds contains subtleties not found in the usual quantum mechanical tunneling problem.

We will present a detailed discussion of this method, focusing on the

Rindler spacetime (the spacetime seen by an accelerating observer, moving with a constant acceleration through vacuum) and the associated

Unruh radiation since this is the prototype of the phenomena of radiation from a spacetime with a horizon.