# Hawking Radiation Include Only If Paper Has a Subtitle

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December 22, 2016

## Outline

Motivation

The Basic Problem That We Studied

Motivations

**Approaches** 

Interpretations

## Motivations for the Radiation

#### Conceptual developments

- Quantum physics
  - Uncertainty principle, see e.g. [14]
  - ▶ Vacuum polarisation, see e.g. [7]
- Classical physics
  - ▶ (Fictitious) entropy and temperature of black holes [1, 2]
  - ► Penrose process and super-radiance

## Motivations for the Radiation

#### Technical developments

- ► Field theory in curved space-time: particle creation
  - ▶ in dynamical universes, see e.g. [13]
  - ▶ for accelerated observers [15, 5, 8]

## Quantum fields

On collapsing-star background

[9, 11]

# Quantum fields

On eternal-black-hole background

[4, 7]

## Interpretations

- Thermal-like radiation
  - **123**
- Entropies and temperatures
- Progressive evaporation
- Final fate
- Information
  - ▶ Non-conservation [10]
  - ► Conservation [12]
- Violation of unitarity

# Summary

- ► The first main message of your talk in one or two lines.
- The second main message of your talk in one or two lines.
- ▶ Perhaps a third message, but not more than that.

- Outlook
  - Something you haven't solved.
  - Something else you haven't solved.

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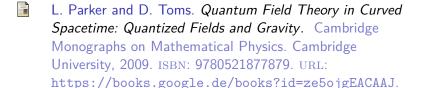
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