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# The Li–Yau–Hamilton estimate and the Yang–Mills heat equation

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## **Abstract**

The talk will focus on two connected subjects. First, we will discuss the Li–Yau–Hamilton estimate for the heat equation on a manifold  $M$  with nonempty boundary. Results of this kind are typically used in the proofs of monotonicity formulas related to geometric flows. Second, we will talk about the long-time existence of solutions to the Yang–Mills heat equation in a vector bundle over  $M$ . Our objective will be to describe the behavior of such solutions depending on the dimension of  $M$ .