



The lecture at Institute of Engg & Technology

# Lecture explains physics behind the movie Interstellar

*IITGn prof Dr Sudipta Sarkar delivers lecture*

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Dr Sudipta Sarkar, assistant professor, IIT Gandhinagar, delivered a lecture on 'The Physics behind Interstellar: The Movie' as part of the 'AU-NASI Science Lecture Series' at the Institute of Engineering and Technology on July 24. The movie positions the concept of time as five-dimensional, unlike the general observation of three dimensions of universe.

Dr Sarkar took the audience through the 400-year-old journey of physics, dating back to Galileo, Stephen Hawking and Kip Thorne. After the talk, the ground was laid open for questions from the audience. One of the questions asked was about the centre of the black hole. Dr Sarkar said that if black hole is assumed to be a rubber sheet, then it is broken at the centre and the centre is called singularity.

A science enthusiast asked if alternate path could not be an answer to time travel. Dr Sarkar agreed to the alternative saying that there is theory of a parallel universe or alternate path in which future would also change according to the present. "This will help traversing the past without contradicting the future. But in my opinion, time travel is not possible," he said.

## Milestones in time travel highlighted by Dr Sarkar

**If time travel** is possible and past can be revisited, what if one walks down the past and kills one's own grandfather? This makes one's existence questionable.

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**According to Newton's** Absolute space and Absolute time theory, time travel is not possible.

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**However, Einstein's general** theory of relativity that makes time relative with motion, says that time moves slower in motion. This makes time travel possible as gravity is assumed to affect the casual structure, flow of time and motion of light.