

Sixteenth Marcel Grossmann Meeting



Contribution ID: 949

Type: **Talk in the parallel session**

Teaching the equivalence principle in year 7

Friday, 9 July 2021 07:15 (25 minutes)

The process of choosing appropriate educational content to teach Einsteinian physics in middle school is a challenge for researchers and teachers. The Einstein-First project in Australia is designing and implementing an Einsteinian physics curriculum for schools. My research is designed to trial a learning progression of Einsteinian concepts within an overall curriculum structure for year 7. The main concepts related to Einstein's theory of gravity will be integrated into the existing year 7 curriculum in Australia. We will evaluate how to teach Einstein's "happiest thought", the equivalence principle. This core idea is crucial to understanding our modern theory of gravity, which was developed by Einstein in his general theory of relativity in 1916. We will exhibit 4 objects that students investigate in free fall. This allows for representations that focus on the essential building blocks that lead to a better understanding of gravity. We will mainly explore learning outcomes, mental models and teachers' perspectives.

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Session Classification: Teaching Einsteinian Physics to School Students

Track Classification: Education: Teaching Einsteinian Physics to School Students