

## PHYSICS AND ASTRONOMY SEMINAR

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## m Entering No One Yet Has Crossed: Alexander Friedman and the Origins of Modern Cosmology

## Abstract

Ninety years ago, in 1922, Alexander Friedman (1888-1925) demonstrated for the first time that the General Relativity equations admit non-static solutions and thus the Universe may expand, contract, collapse, and even be born. The fundamental equations he derived still provide the basis for the current cosmological theories of the Big Bang and the Accelerating Universe. Later, in 1924, he was the first to realize that General Relativity allows the Universe to be infinite, thus adding another dimension to resistance from Einstein, yet from 1931

the creator of General Relativity became their staunchest supporter.

astronomical ideas of how to check General Relativity in practice. Recently discovered corpus of

circumstances surrounding the writing of his 1922 work and his relations with Paul Ehrenfest. I explain

1998-2004 astronomical observations that led to the 2011 Nobel Prize in Physics. Because of the recent debates among science historians, I compare Friedm

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