

Plenarvortrag

PV III Di 8:30 HS 1

Interdisciplinarity in Early Physical Cosmology — ●HELGE

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Modern physical cosmology emerged in the period from about 1920 to 1970, characterized by contributions not only from astronomers and mathematical physicists, but also from astrophysicists and physical chemists. Evolution cosmologies with a finite past (that is, of the big bang type) presupposed a pre-stellar universe of which there was no direct observational evidence. However, according to the research pro-

gram of “nuclear archaeology” the distribution of the elements constituted such evidence in a fossil form. The question of the origin of the elements was at first foreign to the cosmologists, but it turned out to be central to the development that in the 1960s led to the hot standard big bang theory. Although the question was mainly one of nuclear astrophysics, it relied to a considerable extent on data from so-called cosmochemistry and from reasoning based on physical chemistry. The lecture outlines and discusses the physico-chemical approach to cosmology from about 1940 to the discovery of the cosmic microwave background in 1965.