



Università  
Ca' Foscari  
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Culturali

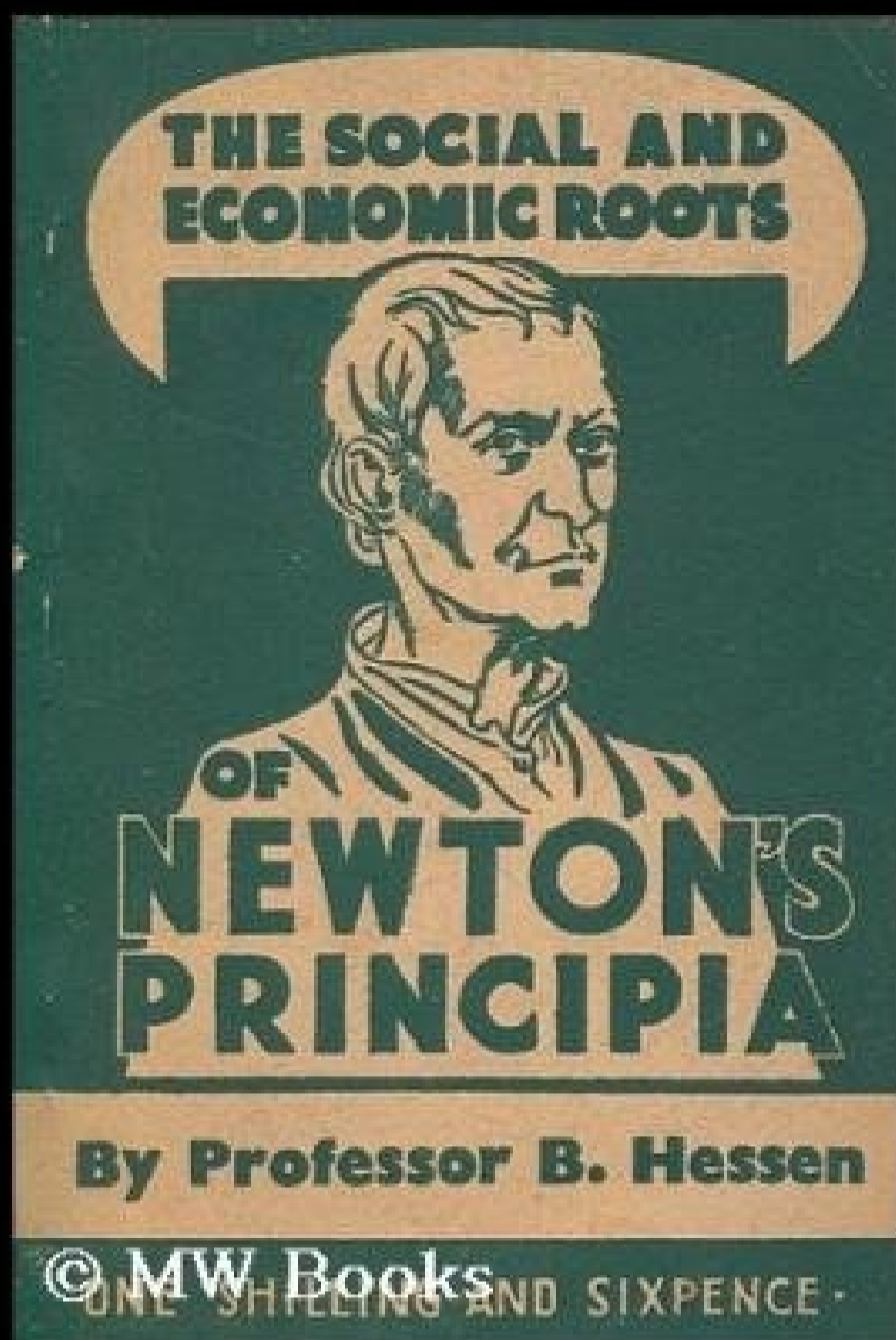


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**Monday  
2020 Jul 6**

Beginning at  
h. 3:00 p.m.

# Workshop ERC EarlyModernCosmology

Interactive Online Seminar  
with mandatory registration

**Sean Winkler**, Vienna Circle Institute  
*Quantum and Materialist Dialectics: Dynamics  
and Statistical Regularity in Hessianian Marxism*

Guest hosted by  
the ERC EarlyModernCosmology  
GA 725883

**Workshop held on Google Meet**

The link will be provided to the  
registered participants.

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In this paper, I will discuss the significance of dynamic and statistical regularity in the development of Soviet philosopher, Boris Hessen's dialectical materialist approach to the history of science, specifically in his effort to reconcile quantum mechanics with Marxism. Best-known for delivering a paper entitled "The Social and Economic Roots of Newton's 'Principia'" in 1931, Hessen maintained that the content of Sir Isaac Newton's natural philosophy was traceable to forms of socioeconomic development and technological progress specific to 17th-Century England. The paper was profoundly influential in the founding of the broader schools of the Sociology of Scientific Knowledge and Science and Technology Studies. However, Hessen's other writings were characteristically different from this paper, as in the Soviet Union, he was engaged in a fierce defense of quantum mechanics---considered incompatible with Soviet Marxism at the time---, along with the autonomy of natural scientific research. I argue that Hessen's 1931 paper and writings on quantum mechanics are not only compatible, but illustrative of his unique approach to the dialectical materialist study of the history of science, which understands this process as an ongoing development of the unity in opposition between dynamic and statistical regularity. Ultimately, Hessen marshals this argument into a compelling scientific defense of the need for socialist politics to foster democratic, collaborative approach to natural scientific research with non-Marxists.