

Jury report Hanneke Janssen Memorial Prize 2023

The jury received only two nominations this year. One was for a Master's Thesis by Thijs Latten entitled "Revolutionary Physics of Illusionary Phenomena" from the University of Leiden; an another by Cameron Dashwood entitled "Entity emergence for structural realists" submitted at the University of Cambridge.

The Jury has decided unanimously to not award the Prize this year. In our opinion both Theses did not quite meet the quality of the winning submissions in previous years. Below, we summarize our deliberations

On the Thesis by Latten:

This Thesis deals with an aspect about Erwin Schrödinger's work in physics, i.e., the influence of Indian philosophy on his work. The Jury admired the originality of this work, and the fact that the author researched the Schrödinger Archive in Vienna to study his unpublished notes.

However, the Jury also felt that the arguments presented in this Thesis were underdeveloped. In particular, the main conclusion that the Indian philosophy played an ever-so-important role in Schrödinger's physics is made plausible only in the case of Schrödinger's proposal to conceive of particles as wave crests. But this proposal was made in his paper "Zur Einsteinschen Gastheorie" (1925) and does not directly translate into Schrödinger's later wave mechanics. Thus we did not find the thesis a sufficiently strong contribution to the field of history and philosophy of modern physics for which the prize is intended (although it may be a strong thesis in philosophy).

On the Thesis by Dashwood:

This Thesis revisits the long-standing problems of giving an account for reduction and emergence in the philosophy of science and argues for a new account, based on David Wallace's math-first view on physical theories.

The jury valued the clarity of writing and the novelty of the approach undertaken in this Thesis. However, its argument for an account of emergence from this so-called "math-first" view on scientific theories is supported by one case study only: the case of phonons in solid state physics. And, in our opinion, the Thesis is flawed in its evaluation of this case study: it argues in section 4 that the "normal mode theory" is equivalent to the so-called "Theory of Everything" by a mere change of variables. This leads the author to reject claims in the literature there is emergence involved in this transition. Yet, the Thesis also details in Section 2.2 how this transition involves two approximations. This clearly entails that this transition is not a mere matter of changing variables, and undercuts the presented claim that the two theories are mathematically equivalent. Overall, the thesis seems too brief to really discuss the full subtlety of the matter.

The Jury
Guido Bacciagaluppi
Klaas Lansman
Christoph Lehner
Jos Uffink
Francesca Vidotti

