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Philosophy of Physics: Philosophy of Cosmology

SE2, A, Je 16-18, PHIL006

Modules: MA6, MA8

- 20 Sep Introduction to the seminar and the topic
*Chris Smeenk. Philosophy of cosmology. In R. Batterman (ed.), *Oxford Handbook for the Philosophy of Physics*. Oxford UP (2013), pp. 607-652.
- 27 Sep Is cosmology a science?
Milton K Munitz. Kantian dialectic and modern scientific cosmology. *Journal of Philosophy* **48** (1951): 325-338.
- 4 Oct Guest lecture: Mauro Dorato (Roma 3), *Dynamical versus structural explanations in scientific revolutions*
- 11 Oct Is cosmology a science? (continued)
Chris Smeenk. The logic of cosmology revisited. Manuscript (2008).
- 18 Oct The big bang models of quantum gravity
Nick Huggett and Christian Wüthrich (2018). The (a)temporal emergence of spacetime. *Philosophy of Science* **85**: forthcoming.
- 25 Oct Explanation in cosmology: What does inflation explain?
John Earman (1995). *Bangs, Crunches, Whimpers, and Shrieks*. Oxford: Oxford University Press, Ch. 5, pp. 124-159.
- 1 Nov Explanation in cosmology: What does inflation explain? (continued)
C D McCoy. Does inflation solve the hot big bang model's fine-tuning problems? *Studies in History and Philosophy of Modern Physics* **51** (2015): 23-36.
- 8 Nov *No seminar* (semaine de lecture)
- 15 Nov Testing inflation
Chris Smeenk. Testing inflation. In Khalil Chamcham et al. (eds.), *The Philosophy of Cosmology*. Cambridge UP (2017), pp. 206-227.
- 22 Nov Explanation in cosmology: anthropic reasoning and the multiverse
Don N Page. Predictions and tests of multiverse theories. In Bernard Carr (ed.), *Universe or Multiverse?*. Cambridge UP (2007), pp. 411-429.
- 29 Nov Explanation in cosmology: anthropic reasoning and the multiverse (continued)
Klaas Landsman. The fine-tuning argument: exploring the improbability of our existence. In Klaas Landsman and Ellen van Wolde (eds.), *The Challenge of Chance*. Springer (2016), 111-130.

*John Earman. The SAP also rises: a critical examination of the anthropic principle. *American Philosophical Quarterly* **24** (1987): 307-317.

- 6 Dec Guest lecture: Laura Feline (Roma 3), Quantum information theory
- 13 Dec Simulation and modeling in cosmology and astrophysics
Sibylle Anderl. Simplicity and simplification in astrophysical modeling. *Philosophy of Science* (forthcoming).
- 20 Dec Guest seminar: Claus Beisbart (Bern)
Claus Beisbart. Constructing a world: Computer modeling in cosmology. Manuscript (2018).

Readings marked with an asterisk (*) are not mandatory.