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Introducción

Antecedentes. Breve historia de las ideas sobre el realismo y la causalidad. Estado del arte en la cuestión.

Bibliografía a utilizar

Beebe, H., *The Oxford handbook of causation*, (2010), Part I The History of Causation
Braver, L., *A Thing of This World. A history of Continental Anti-Realism*. (2007)
Levy, P. *The semantic sphere 1 : computation, cognition, and information economy* (2011)

Explicaciones mecanicistas

<https://www.youtube.com/watch?v=Lw6aQdgrp1M>
Scientific Explanation 3 - The Causal-Mechanical Model

¿Leyes naturales? La causalidad en la naturaleza

[Nomological theories of causation](#)

Espacio, tiempo y causalidad en física moderna, en *Escritos sobre física y filosofía*, Wolfgang Pauli, Debate
<https://es.scribd.com/doc/193778352/Escritos-Sobre-Fisica-y-Filosofia-Wolfgang-Pauli>

Space, time and causality, Richard Swinburne, Reidel (1983)
<https://philpapers.org/rec/SWISTA>

Schlick, Moritz, *Filosofía de la naturaleza*, 2002, Ediciones Encuentro (disponible en Biblioteca Uned)

- El principio de causalidad en la física clásica
- La causalidad en la nueva física

Swinburne, Richard (ed), *Space, Time and Causality*, 1983 (disponible en biblioteca UNED)

- Absolute versus relative space and time
- time and causal conectibility
- temporal and causal asymmetry
- Causality and Quantum Mechanics
- Causality, Relativity and the Einstein-Podolsky-Rosen (EPR) Paradox

Modelos y simulaciones

“las leyes naturales se expresan bajo la forma de [ecuaciones diferenciales](#)”

— Schlick 2002 p. 67, ver [Ecuaciones Diferenciales \(libro-video\)](#)

“ Olivier Bournez and Amaury Pouly have proved an interesting theorem about modeling physical systems. They presented their [paper](#) at ICALP 2017 last month in Warsaw. Today Ken and I wish to explain their theorem and its possible connections to complexity theory. “

— [Modeling Reality - A surprising theorem about differential equations](#)

“Modeling is the process of writing a differential equation to describe a physical situation”

— [Paul's Online Math Notes](#)

[Models and Simulations 7](#), Universitat de Barcelona, mayo 2016

— [book of abstracts](#)

Interviews

[Marc Lange](#)

Marc Lange specializes in philosophy of science and related areas of metaphysics and epistemology, including parts of the philosophy of physics, philosophy of biology, and philosophy of mathematics. Here he discusses the necessity of laws of nature, why their necessity is contingent, whether these laws are immutable, what meta-laws are and what they're for, laws and objective chance, why laws are laws because they are necessary rather than because they are laws, non-causal explanations in science and maths, explanation by constraint and why we don't find them in maths, really statistical and dimensional explanations, why non-causal explanations are important in maths, and why despite their diversity non-causal explanations really are all explanations.

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