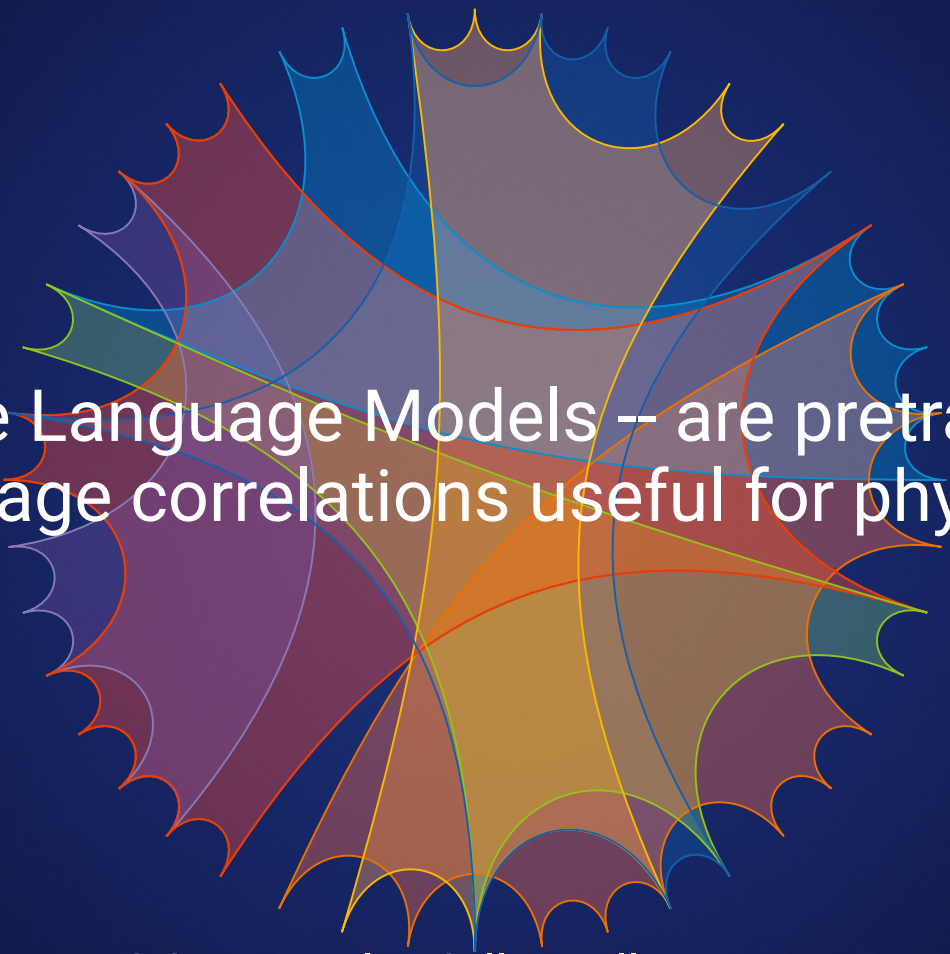
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Caroline Heneka

ITP, HEIDELBERG UNIVERSITY



Large Language Models -- are pretrained language correlations useful for physics?

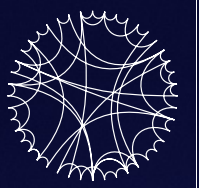
Pretak by Daniel Schiller will start at 1 pm

June 19, 2026, 1:30 PM, Phil 12 GHs

COFFEE & SNACKS IN ROOM 106

ZOOM: Meeting ID: 935 6549 3662, Code: 928036

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ABSTRACT

For many fundamental physics applications, transformers, as the state of the art in learning complex correlations, benefit from pretraining on quasi-out-of-domain data. The obvious question is whether we can exploit Large Language Models, requiring proper out-of-domain transfer learning. We show how LLMs can be used to analyze and generate 3D maps of the cosmological large-scale structure for a large part of the observable Universe, in particular 21cm data of neutral hydrogen for the Square Kilometre Array (SKA). We combine a LLM with connector networks and show, for cosmological parameter regression and lightcone generation, that this Lightcone LLM (L3M) outperforms standard initialization and compares favorably with dedicated networks of matching size.

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