Calculating Properties of Exotic Hadrons Using Supervised Machine Learning

(Technical Report)

Science Policy and the COVID-19 Pandemic

(STS Research Paper)

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Preface

The expense and the social significance of substantial scientific research endeavors inevitably exposes them to political and other social influences.

Machine learning techniques were applied to seek patterns among hadrons. The algorithm uses the patterns to predict properties of exotic hadrons, which are theorized to consist of four or more quarks. Predictions produced by the model will be compared with particle data from colliders around the world.

Because science policy is a product of political processes, national responses to the 2020-21 COVID-19 pandemic have varied widely. Pandemic responses in four countries and two regions were examined and their success evaluated. The findings indicate that a direct correlation exists between countries that orchestrated their responses around the advice of researchers and those that performed well against the virus. Conversely, those nations who did not prioritize a scientific response performed poorly.

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