

Seminario de Química Orgánica

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AULA SEMINARIO DQO – 3º piso – PAB. II – CIUDAD UNIVERSITARIA

AULA VIRTUAL DQO: <https://zoom.us/my/qo.aula01> - Clave: exactas20

"301060.exactas.uba.ar: A mathematical model for football results prediction in the World Cup Qatar '22"

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Sports results prediction using mathematical models is of great interest not only to sports team managers, coaches, and players but also fans and bettors. Various methodologies have been applied in recent years to design such models. This presentation reports on work done through a football prediction website at the University of Buenos Aires whose address is 301060.exactas.uba.ar, in homage to Diego Maradona.

The model underlying the site is a variation on a predictive model devised by Dixon and Coles in 1997. It assumes that goal-scoring follows a Poisson distribution. Our version includes home-away factors that are specific to each team rather than general ones as in the Dixon and Coles approach. In our view, this is more realistic than specifying them without distinctions by team.

This reformulation, which had previously been employed to predict the outcomes of the 2018 World Cup, the South American qualifiers for the last two World Cups, the 2019 and 2021 editions of the Copa America, and the most recent Argentine football seasons, was used again for the Qatar World Cup in 2022.

Evaluations using various metrics for real games and tournaments have demonstrated that our model is a good predictor of real game outcomes. This presentation will include some of the results on the teams the model favored to win the 2022 World Cup and the predicted ordering—Brazil, followed by Argentina (the actual winner) and France (the actual runner up). We will also present the model's predictions for the tournament's individual matches and some comparisons between its predictions and those of various betting websites.

In addition, some extensions of the approach implemented in our model to basketball and rugby will be discussed.

Finally, the coverage garnered by our model in the media has proved to be an effective way of promoting interest among the general public in the use of mathematical and computational models for solving real-world problems.