

THE DEPARTMENT OF MATHEMATICAL SCIENCES

Purdue University Fort Wayne

together with the Pi Math Club and the PFW Actuarial Club

are pleased to present

Ramón Orive

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**Probability, Interpolation, and Game Theory:  
Estimating the Parameter of a Biased Coin**

**Abstract**

A coin is tossed  $n$  times resulting in  $k$  heads. What is  $p$ , the probability of obtaining a head when we flip the coin once? The classical Maximum Likelihood method gives a simple answer to this question: the best estimator for  $p$  is the ratio  $k/n$ . The estimation of the parameter of a biased coin from the result of a few tosses is a classical problem in Probability. In this talk we provide an alternate estimator to the one given by the Maximum Likelihood procedure and locate it within the framework of Point Estimation Theory. The connection of our method with classical problems and conjectures in Interpolation Theory is pointed out, as well as its interpretation in terms of Game Theory. Finally, some numerical examples are presented and some open problems are posed.

Joint work with: David Benko (University of South Alabama), Dan Coroian, Peter Dragnev

Noon – 1:00, Wednesday, November 14, 2018. Location: Kettler 216

<http://www.pfw.edu/departments/coas/depts/math/news/seminars.html>