

LABORATORY EARTHQUAKE ANALYSIS

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² Add Los Alamos, USGS and or Kaggle here?

Abstract. In August 2017 the Los Alamos National Laboratory predicted[1] the time remaining of imminent laboratory earthquakes to occur with 90 % confidence and $R^2 = .89$ *additional statistical facts to be added*

The technologies for collecting data and processing it have improved; predict the time remaining for imminent laboratory earthquakes more precisely than

Earthquakes cause deaths and damage.

We analyze the data for patterns using geological subject matter expertise, statistical methods and natural intuition. We design a statistical algorithm to model the patterns and predict the time remaining until a laboratory earthquake will occur for given test data. We compare predicted versus actual time remaining to determine our accuracy.

The evidence of this experiment suggests *null hypothesis, statistical results with pvalue or confidence interval and relevant t scores* we can predict impending laboratory earthquakes *"Be careful not to accidentally plagiarize. DO NOT use figures from other publications. Even if you cite it; you are getting into areas where copyright issues arise."*

1 INTRODUCTION

1 Paragraph Motivation (Sets General problem domain)

1 Paragraph Problem Statement (Specific Problem solved by the work)

2-3 paragraphs on solution

1 Paragraph on main results (plural)

1 Paragraph on main conclusions (plural)

1 Paragraph on paper organization

Data was attained from a Kaggle Competition sponsored by the Los Alamos National Laboratory: www.kaggle.com/c/LANL-Earthquake-Prediction. The data in this competition is the result of a laboratory simulation.

This is another section. We assume that H is (A_∞, B_∞) -subquadratic at infinity, for some constant ...

Notes and Comments. The first results on subharmonics were ...

2 TUTORIAL MATERIAL

Paper should be tutorial in nature Audience is data scientists of varying levels of knowledge. Keep newer students in mind

3 DATA

Must have section that defines data Use tables and figures to illustrate data attributes

4 METHODS AND EXPERIMENTS

Define algorithms, methods and experiments DO NOT give play by play of everything we did Dont put code in paper; if anything put in appendix. Put versions of software but nop one cares about how to use technology; just state what we did.

5 RESULTS

Results of experiments Use tables and graphs Use tables and graphs Use tables and graphs Don't forget explanations

6 ANALYSIS

Analyze results. These are NOT conclusions.

7 ETHICS

Discuss ethics of your problem You MUST have ethics section.

8 CONCLUSION

Draw conclusionS (plural, more than one conclusion- minimum of 3) This is NOT a summary section.

References

1. Bertrand Rouet-Leduc, Claudia Hulbert, N.L.K.B.C.J.H.P.A.J.: Machine learning predicts laboratory earthquakes