Tests of a nearest-neighbor fitting algorithm using MINUIT

Matt Bellis* and Lindsay Blake†

Department of Physics And Astronomy,

Siena College, Loudonville, NY 12211

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Abstract

Fitting data to some model is a standard part of most physics analysis and usually involves a χ^2 technique or maximum likelihood method. In both these cases, an analytic solution for the model is usually readily available and so a best-fit line or probability density function (PDF) can be calculated. However, sometimes an analytic solution is not available, but instead datasets based on the model can be generated and used as templates for fitting, usually as binned histograms. This approach becomes more challenging for multidimensional datasets. We present a different approaching using the density of nearest neighbors as a replacement for a standard PDF, but still using the standard minimization machinery, MINUIT. We find...

I. INTRODUCTION

II. CONCLUSIONS

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* mbellis@siena.edu

† lm13blak@siena.edu