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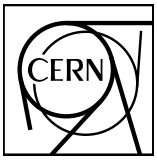

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Test-beam performance of a tracking TRD prototype

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Abstract

Each paper should be preceded by a short Abstract of not more than 150 words, which should be written as a single paragraph and should not contain references. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magnam aliquam quaerat voluptatem. Ut enim aeque doleamus animo, cum corpore dolemus, fieri tamen permagna accessio potest, si aliquod aeternum et infinitum impendere malum nobis opinemur. Quod idem licet transferre in voluptatem, ut.

Contents

1 Introduction

To optimally reject the combinatorial background while preserving the interesting signal from the data, sophisticated selections exploiting a Machine-Learning (ML) algorithm, trained to distinguish among prompt D_s^+, non-prompt D_s^+, and the combinatorial background, were applied.

The biological effect of radiation depends on the quality of the radiation as well as on the amount of energy absorbed. Evidence suggests that this quality dependence is primarily caused by the differences in rates of energy loss [1–2]. The general criteria that have been used are:

(i) to terminate the iteration when the residue between iterated and experiment values is of the order of experimental errors [1, 3–6]

(ii) to terminate when the smoothest solution has been obtained.

For an overall appreciation of the work carried out in this field, see Refs. [7] and [8].

2 Examples of figures and tables

2.1 Including tabular material

Smith tabulated the average values of mean linear energy transfer (LET) obtained by the different methods used in Ref. [3], and these are reproduced in Table 1.

Note that a table is produced with the `ctable()` environment from the Typst package `rubber-article`, and should be called inside the `#figure()` command. It mimics the `table` environment from LaTeX. The caption should be positioned *above* the tabular material.

Table 1: Calculated mean LET values in water (keV/mm)

Radiation	Smith	Jones
1 MeV α		
200 kVp X-rays total	3.25	1.79
200 kVp X-rays (primary)	2.60	1.48

Table 1 is reproduced from the publication mentioned earlier and shows the good agreement between predictions and calculations. Comparison should be made with the decay curves shown in Figs. 6 and 7 of Ref. [4], and further information is given in Section 2.3 and Appendix A.

2.2 Including figures

Figures can also be imported, in PDF, PNG and JPEG format. Figure 1 show how to include a figure from an external file with the `#figure(image())` command of Typst. The `shortcap()` command from the `rubber-article` package allows to give both a short and a long caption. The short caption is used in the outline with the list of figures.

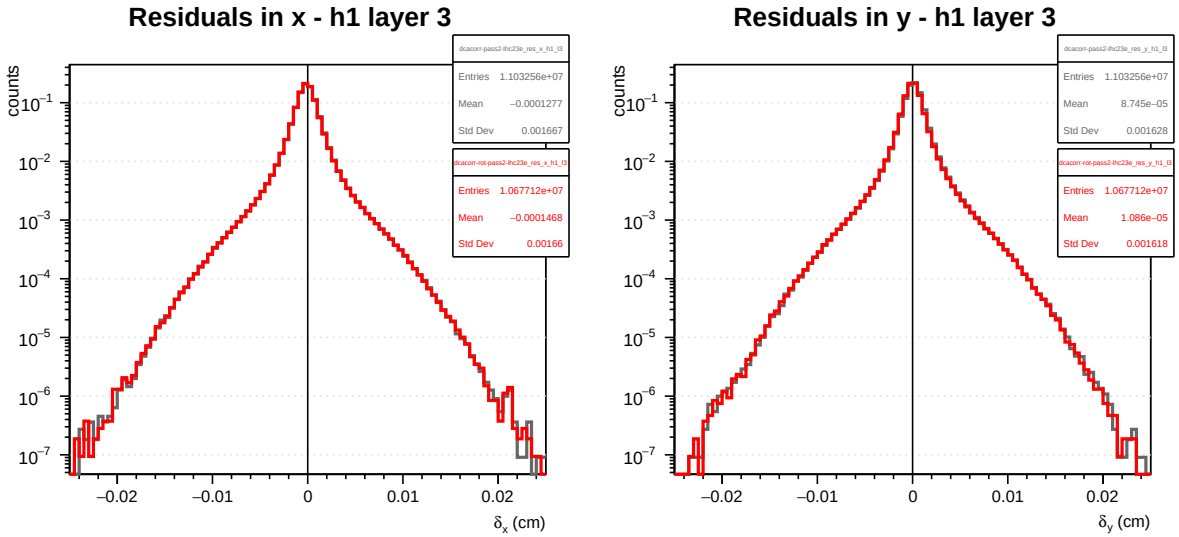

Fig. 1: Including a figure from an external file. Here, we are plotting the cluster-track residual distributions for the back face (layer 3) of the top half (h1) disk 1 of the MFT detector for two alignment geometries that only differ by global translations and global rotations of each half MFT.

2.3 Examples of equations

Equation 1 representing a straight line at an angle θ, is

$$n^k(h)u = \lambda htgq_k \tag{1}$$

and

$$n^k(h) = kh\frac{k}{32} \tag{2}$$

where:

- λ is the distance between two consecutive sweep lines,
- u is the least count.

We consider a parabola, the tangent of which is parallel to the vertical axis of the main matrix. A sufficiently good approximation to a parabola [see Eq. 3] drawn inside the matrix can be given by the following formula:

$$n_q = \alpha q^2 \alpha = \frac{\lambda^2}{3Ru} \tag{3}$$

where R is the radius of curvature. We have defined the following relationship:

$$n_q + \mu_q \text{ with } \mu_q = \alpha(2q+1) \tag{4}$$

3 Background

In this report, we will explore the various factors that influence fluid dynamics in glaciers and how they contribute to the formation and behaviour of these natural structures.

- The climate
  - Temperature
  - Precipitation

– The topography
– The geology

The flow rate of a glacier is defined by the following equation:

$$Q = \rho A v + C \tag{5}$$

Total displaced soil by glacial flow:

$$7.32\beta + \sum_{i=0}^{\nabla} \frac{Q_i(a_i - \varepsilon)}{2} \tag{6}$$

$$v := \begin{pmatrix} x_1 \\ x_2 \\ x_3 \end{pmatrix} \tag{7}$$

In the case of glaciers, fluid dynamics principles can be used to understand how the movement and behaviour of the ice is influenced by factors such as temperature, pressure, and the presence of other fluids (such as water).

3.1 In this paper

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Fig. 2: Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magnam aliquam quaerat voluptatem. Ut enim aeque doleamus animo, cum corpore dolemus, fieri.

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3.1.1 Contributions

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4 Related Work

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Table 2: This is a custom table

A	B	C
1	2	3
4	5	6
7	8	9
10	11	12
13	14	15

5 Conclusion

The theoretical considerations presented have been confirmed by their close agreement with the results of practical experiments. An account of the earlier work carried out in this field can be found in the bibliography.

It is expected that in the next few years many new results will be published, since a significant number of new experiments have recently been launched.

6 Acknowledgements

We wish to thank C. Brown for his most enlightening comments on this topic.

Appendix

A Construction on a flat site

A.1 General considerations

Following on ECFA recommendation, the project described in this report is based on the assumption that
5 the machine is built close to the present CERN site, and has been taken into account in the cost estimate.

A.2 Effects on the construction

The general layout of the machine would be very similar to that shown in the main body of the report.

List of Figures

List of Tables

References

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