

Studies of $\langle Hits \rangle$, $\langle Tof \rangle$ and $\langle E_{loss} \rangle$ for MiniBeBe trigger capabilities

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July 3, 2020

Table of contents

- 1 Introduction
- 2 Tracks
- 3 Energy deposited
- 4 Time of flight
- 5 Hits

Introduction

- 950,000 Minimum Bias events for $Bi + Bi$ collisions at $\sqrt{s_{NN}} = 9$ GeV, using UrQMD.

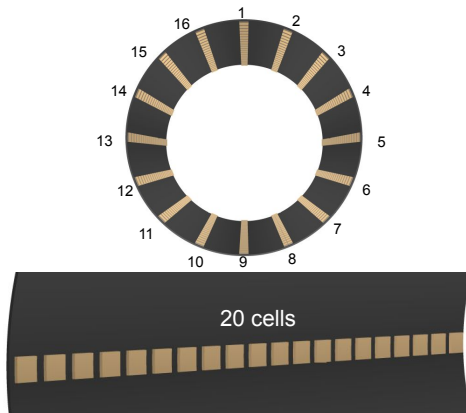


Figure: miniBeBe geometry.

Tracks

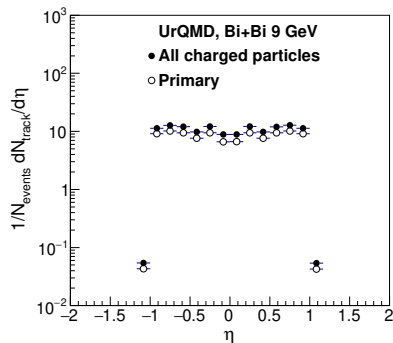
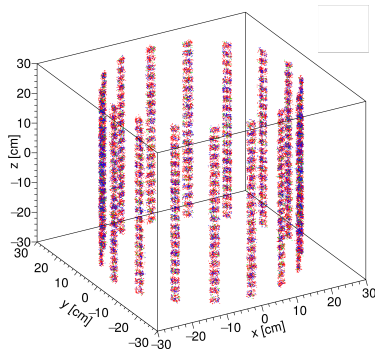


Figure: Geometry selection of the miniBeBe cells of tracks (Left). η distribution of all charged particles and primaries (Right).

Energy deposited

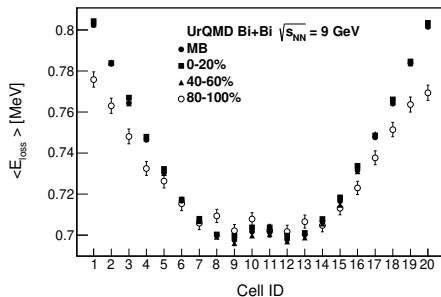
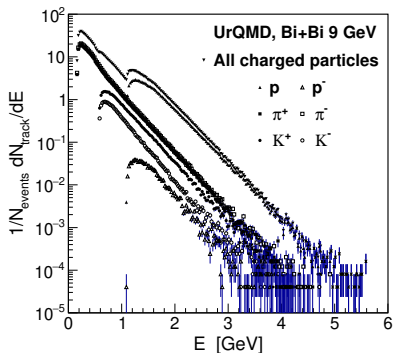


Figure: Identified particle distributions (Left). Strip-average of the energy deposited per cell for the miniBeBe in Bi+Bi at 9 GeV (Right).

Energy deposited

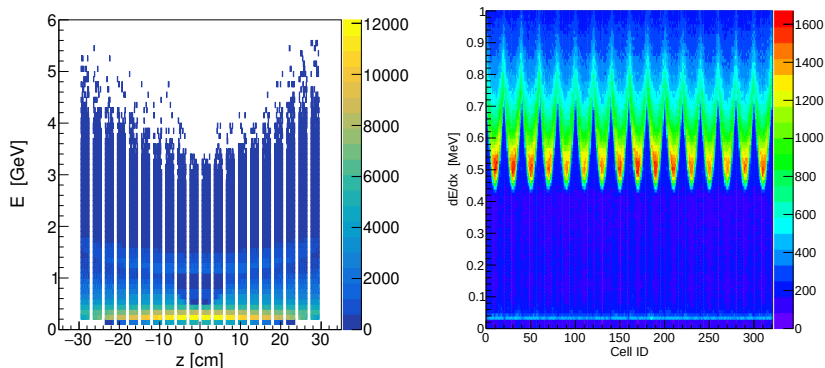


Figure: Scatter plot distribution of particles with respect to the energy they carry (Left). Energy deposited for the hits in the miniBeBe (Right).

Time of flight

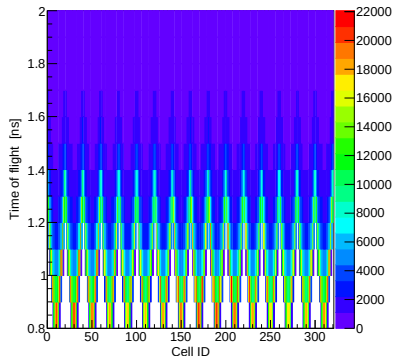
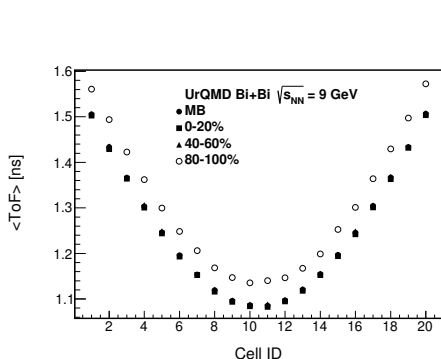


Figure: Strip-average of the time-of-flight per cell for the miniBeBe in Bi+Bi at 9 GeV (Left). Time-of-flight scatter plot for the hits in the miniBeBe (Right).

Hits

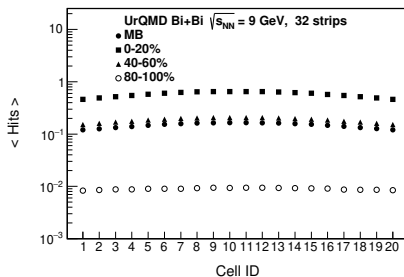
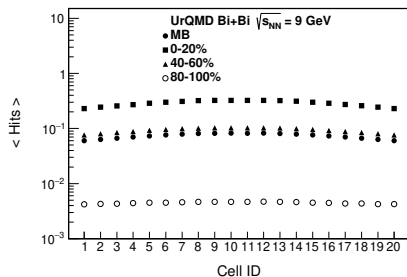


Figure: Strip-average of number of hits per cell for the miniBeBe in Bi+Bi at 9 GeV for 16 strips (Left) and 32 strips (right).

Hits

UrQMD	< Hits >	strips	0-20%	80-100%
Bi + Bi 9 GeV	per cell	16	0.2294 - 0.3248	0.0042 - 0.0047
		32	0.4588 - 0.6501	0.0083 - 0.0094
	complete detector	16	73.40 - 103.94	1.34 - 1.50
		32	293.63 - 416.06	5.31 - 6.02
UrQMD	< Hits >	strips	4 GeV	11 GeV
p + p	per cell	16	0.00043 - 0.00055	0.00100 - 0.00122
		32	0.00084 - 0.00106	0.00199 - 0.00245
	complete detector	16	0.138 - 0.176	0.320 - 0.390
		32	0.538 - 0.678	1.274 - 1.568

Table: Summary of average number of hits in miniBeBe.