

# Total Hadronic ( $\pi^+$ , Ar) Cross Section for Run-II

Authors: Jonathan Asaadi, Elena Gramellini

## Abstract

Puppa

## Contents

<b>1</b>	<b>Uncertainty budget</b>	<b>2</b>
<b>2</b>	<b>Handling Beamline Contamination</b>	<b>2</b>
<b>3</b>	<b>Energy Studies</b>	<b>2</b>
<b>4</b>	<b>Tracking Studies</b>	<b>2</b>
<b>5</b>	<b>Efficiency Correction</b>	<b>2</b>

## **1    Uncertainty budget**

Measuring the pion cross section in LArIAT translates into counting how many pion impinged on a slab of argon at a given energy and how many of those pions interacted at said energy. So, the key questions here are:

- a) how well do we know that the  $\pi/\mu/e$  candidate is a pion? Beam line contamination
- b) how well do we know the kinetic energy at each point of the tracking?
- c) how well do we know when the tracking stops?

## **2    Handling Beamline Contamination**

## **3    Energy Studies**

## **4    Tracking Studies**

## **5    Efficiency Correction**