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# Introduction and Overview

## Why an EIC

## Why an eRHIC

### Importance for NP, U.S., and international science

### User Community and Connections with other disciplines

### Importance for the general good– Outreach, Education, Technology Spin-offs

#### This is an example how the header for a paragraph looks.

Lets discuss a couple of things we agreed on

* All citations will be with the chapters at the end of the chapter
* The text is supposed to be justified to both sides
* Figure, table and equation numbering is just a subsequent number through all the chapters.
* Please don’t hardcode any cross references to chapters, sections, tables, figures, equations or ….

This is normal text and now comes an example of a figure and its caption.

After a line break the text gets intended as the beginning of this line. This is a cross reference to a chapter to do it correctly type chapter and insert cross-reference **Error! Reference source not found.** and this is the cross reference to Figure 1. We do the same for equations. All cross references are inserted as hyperlinks so you can click on it to jump to the respective item.

|  |
| --- |
|  |
| Figure : at this moment in time we number figures through the document without chapter numbers. Note that figure and caption are contained in a 1 column, 2 row table. Picture in row 1 and caption in row 2. This allows expanding it to a 2 column tables (or more) for side-to-side plots. To format and align it is often better to switch on borders. |

Below an example of two figures side-by-side using a 2x2 table. Even if the figures would have a different size the captions would be vertically aligned.

|  |  |
| --- | --- |
| Macintosh HD:Users:ullrich:Documents:EIC:WhitePaper:WhitePaperInWords:tex:figures:figures_eA:xq2plane-xA-EIC.eps | Macintosh HD:Users:ullrich:Documents:EIC:WhitePaper:WhitePaperInWords:tex:figures:figures_helicity:x-q2-poldata.eps |
| Figure 2: another figure. Upper row, left column. Caption is in it’s own row. | Figure 3: yet another one. Caption is always aligned. |

|  |  |  |  |
| --- | --- | --- | --- |
| **A** | **B** | **C** | **D** |
|  |  |  |  |
|  |  |  |  |

Table : This is a table example

And here comes an example for an equation.



To reference this equation we will use cross-referencing like for tables, pictures, chapters and so on. This is the reference to the currently only equation .

# The Science of eRHIC

##  QCD as a major thrust of NP

##  New science opportunities with EIC (White Paper is reference)

##  Science reach of eRHIC

# eRHIC Machine Design

##  The design concept: basic parameters, machine elements, cost goal

##  Technology developments that enable eRHIC

##  Machine and IR designs

##  R&D and path to final design

##  Future upgrade options

# eRHIC Detector Requirements and Design Ideas

## Detector Requirements

## Possible Detector Realizations

### A Model Detector

### ePHENIX

### eSTAR

### Low angle hadron and lepton tagger designs, IR integration and performance

##  Luminosity and polarization measurements

# Implementation: Schedule & Cost

## Transition from RHIC to eRHIC: straw-man schedule and cost off-sets