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Abstract:
Work is work for some, but for some it is play.

Keywords: transport sweeps; discrete-ordinate method; radiation transport; massively parallel simulations; discontinuous Galerkin; unstructured mesh

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Chapter 1 Introduction

Contents

1.1 Introduction

For equations you can use the following shortcuts:

```
% Un-numbered equation with alignment
\beq
x^2 + y^2 &= R^2 \\
y         &= mx + c
\eeq
```

$$\begin{aligned} x^2 + y^2 &= R^2 \\ y &= mx + c \end{aligned}$$

```
% Numbered equation with alignment
\beqn
x^2 + y^2 &= R^2 \\
y         &= mx + c
\eeqn
```

$$\begin{aligned} x^2 + y^2 &= R^2 \\ y &= mx + c \end{aligned} \tag{1.1}$$

```
 % Numbered equation array with alignment
\begin{align}
x^2 + y^2 &= R^2 \\
y         &= mx + c
 \end{align}
```

$$x^2 + y^2 = R^2 \tag{1.2}$$
$$y = mx + c \tag{1.3}$$

Vector notations:

$$\begin{aligned} \text{\div} &= \overrightarrow{\nabla}\cdot & \text{\bdiv} &= \boldsymbol{\nabla}\cdot \\ \text{\grad} &= \overrightarrow{\nabla} & \text{\bgrad} &= \boldsymbol{\nabla} \\ \text{\vec\{x\}} &= \overrightarrow{x} & \text{\bvec\{x\}} &= \mathbf{x} \\ \text{\bb\{A\}} &= \bar{\bar{A}} & \text{\mat\{A\}} &= \bar{\bar{A}} \\ & & \text{\Omegabf} &= \boldsymbol{\Omega} \end{aligned}$$

Figure 1.1: Example figure inclusion

Code highlighting C++:

Code Snippet 1.1: Code example

```
// This is a single line comment
/*This is a
multiline comment.*/
int main(int argc, char** argv)
{
  double x=2;
  std::cout << "hello world";
  FunctionCall(2);
  return 0;
}
```

Code Snippet 1.2: Code example smaller

```
// This is a single line comment
/*This is a
multiline comment.*/
int main(int argc, char** argv)
{
  double x=2;
  std::cout << "hello world";
  FunctionCall(2);
  return 0;
}
```

1.2 Conclusions and Outlook

This work is obviously the most awesome but maybe someone might want to look at closing the valve on section 4. It might open a portal to another dimension. asd

1.3 Acknowledgments

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Chapter 2 Cool stuff A

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2.1 Orbital mechanics

Chapter 3 More

Contents

3.1 What more?

Bibliography

[1] Lewis E.E., Miller W.F., *Computational Methods of Neutron Transport*, JohnWiley & Sons, 1984

Appendix A First appendix

Put “Lazy reader stuff here”.