

Derivation of Continuity Equation in Spherical Coordinates

James Wright

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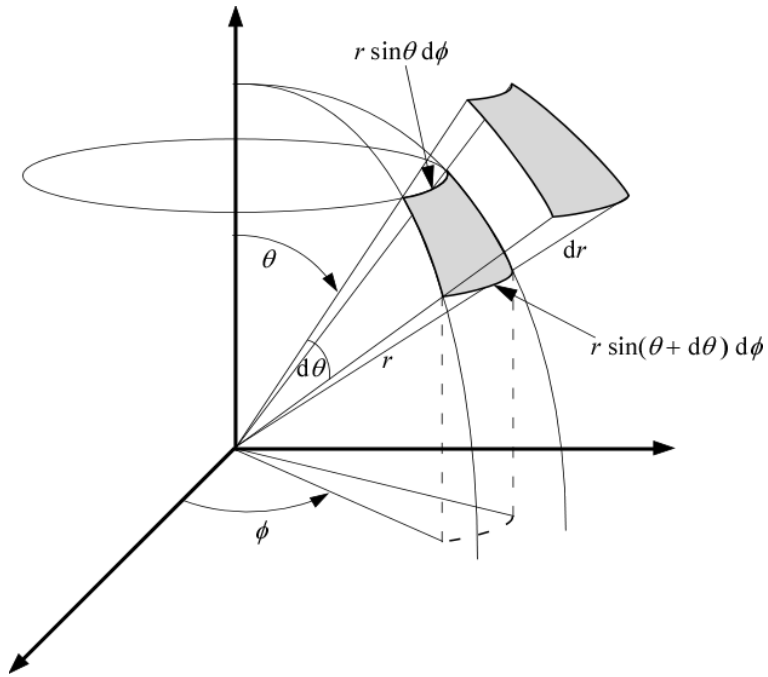


Figure 1: The control volume in spherical coordinates.

1 Overview

This document goes over the derivation of the continuity equation in spherical coordinates. It is assumed that the reader is already knowledgeable as to the nature of spherical coordinate systems.

The base equation that will be used is thus:

$$\frac{\partial m}{\partial t} \tag{1}$$