

## Autonomous Vehicle Simulation (AVS) Laboratory

### AVS-Sim Technical Memorandum

Document ID: AVS-SIM-inertial3DSpin

#### GUIDANCE MODULE TO PERFORM AN INERTIALLY CONSTANT SPIN

Prepared by	H. Schaub
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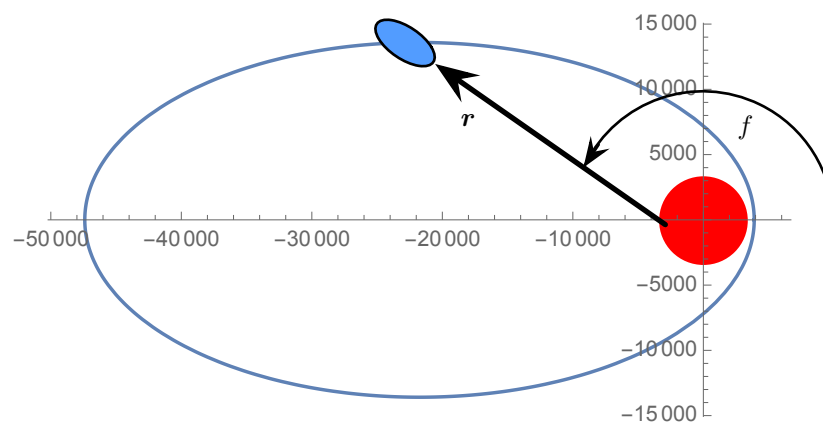
<b>Status:</b> Initial Version
<b>Scope/Contents</b>
Generate the reference attitude trajectory for a general 3D inertial spin with a constant inertial angular velocity vector. A corrected body frame will align with the desired reference frame.

Rev:	Change Description	By
Draft	initial copy	H. Schaub

## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Document ID</b>	<b>1</b>
<b>3</b>	<b>Report Formatting and Styling</b>	<b>2</b>
3.1	Equations . . . . .	2
3.2	Citation . . . . .	2
3.3	Figures . . . . .	2
3.4	Tables . . . . .	2
<b>4</b>	<b>Acknowledgment</b>	<b>2</b>
<b>5</b>	<b>Notation</b>	<b>2</b>

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**Fig. 1:** Sample Figure Inclusion.

## 1 Introduction

Provide a brief introduction to the material being discussed in this report. For example, include what the motivation is, maybe provide a supportive figure such as Figure 1, reference earlier work if needed in a literature review.

## 2 Document ID

The technical document ID is setup through the module name. For example, if the module name is “subModuleTemplate”, then the `inertial3DSpin` parameter is set to this name. The document ID then becomes AVS-SIM-subModuleTemplate.

## 3 Report Formatting and Styling

### 3.1 Equations

Equations are centered with the equation number flush to the right. In the text, these equations should be referenced by name as Eq. (1) or Equation (1) (e.g., not eq. 1, (1), or Equation 1).

$$a = b^2 \tag{1}$$

### 3.2 Citation

The citation of bibliographical references is indicated in the text by superscripted Arabic numerals, preferably at the end of a sentence. This is the default style included in this report L<sup>A</sup>T<sub>E</sub>X class.

References listed at the end of the paper are indicated in the text by a superscript Arabic number. If this causes confusion in mathematics or if a superscript is not appropriate for other reasons, this can be expressed as (Ref. 1).

### 3.3 Figures

Illustrations are referred to by name in the text as Figure 1, Figure 2, etc., or, Figures 3 and 4 (e.g., not figure 1, Fig. 1, or *Figure 1*). Captions are in title case (miniscule lettering with the first letter of major words majuscule); they are 10-point serif font and centered below the figure as shown in Figure ???. Each illustration should have a caption unless it is a mere sketch. An explanatory caption of several sentences is permissible. Each included illustration must be called out (mentioned) in the text. Ideally, figures should appear within the text just before they are called out.

The figure files (PDF preferred) should be stored in a common “Figure” sub-folder. If available, any drawing documents used to create this figure can be stored in a “Support” sub-folder.

### 3.4 Tables

Tables are referred to by name in the text as Table 1, or, Tables 2 and 3 (e.g., not table 1, Tbl. 1, or Table 1). The title is centered above the table, as shown in Table 2. The minimum number of lines needed for clarity is desired. The table font may be adjusted smaller than the body text as necessary.

**Table 2:** A Caption Goes Here

Animal	Description	Price (\$)
Gnat	per gram	13.65
	each	0.01
Gnu	stuffed	92.50
Emu	stuffed	33.33
Armadillo	frozen	8.99

## 4 Acknowledgment

Any acknowledgment which the author or authors wish to make may appear here.

## 5 Notation

If mathematical symbols require definition, a table of notation should appear here. A footnote near the beginning of the paper where mathematics is introduced should direct attention of the reader to this table.