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Where am I? A change of basis project.

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Summary: Linear algebra students are typically introduced to the problem of how to convert from one coordinate system to another in a very abstract way. Often, two bases for a given vector space are provided, and students are taught how to determine a transition matrix to be used for changing coordinates. If students are successful in memorizing this mathematical process, then they are successful at completing such problems. However, students may not be exposed to a physical interpretation of what is accomplished through changing coordinates, or why one may desire to do so. Based on personal NASA industry experience, a linear algebra project has been developed that involves physical interpretation of changing bases.

Classification: H65 M55 D45

Keywords: linear algebra; NASA; change of basis; project

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