1086-65-152 **Paul R Bouthellier*** (pbouthe@pitt.edu), 504 East Main Street, Titusville, PA 16354.

Computing 3D Rotations for Computer Graphics.

In this talk we shall consider computational strategies for rotating 3D models in computer software. We shall use schemes involving Euler angles, quaternions, and hybrid methods. The main problem we shall examine is how to represent a given orientation with a fixed set of Euler angles that can be used by the software for rotational purposes. The problem of interpolating between two orientations is also studied. Gimbal lock and quaternion based methods will also be discussed. Examples of rotations, interpolations, Gimbal lock and wrap-around infinities will be illustrated using 3D animations created in graphics packages such as Studio 3D Max and Poser. (Received July 30, 2012)