

# Scientific WorkPlace<sup>®</sup>

# Scientific Word<sup>®</sup>

- Mathematical Word Processing
- L<sup>A</sup>T<sub>E</sub>X Typesetting
- Computer Algebra



Includes the Beamer Package for slide presentations

The image shows two screenshots of the Scientific WorkPlace software interface. The left screenshot displays a 3D plot of a cone with a grid, and the right screenshot shows a 3D plot of a sphere with a grid. Both plots are rendered in a gradient of colors from purple to red. The software interface includes a menu bar, a toolbar, and a text area with instructions for creating 3D plots.

**To make a parametric animated plot in cylindrical coordinates**

1. Type an expression of the form  $(r(u,v,t),\theta(u,v,t),z(u,v,t))$
2. With the insertion point in the expression, choose **Plot 3D Animated + Cylindrical**.

The next example shows a cone being generated as the line  $z=r$  is rotated about the  $z$ -axis with intervals  $0 \leq r \leq 1, 0 \leq \theta \leq 1$ , and  $0 \leq t \leq 1$ .  
The View Orientation is Turn: 20, Tilt: -40.

**Plot 3D Animated + Cylindrical**  
( $-1+2r, 2r\cos t, -1+2r$ )

**Animated plots in spherical coordinates**

**To make an animated plot in spherical coordinates**

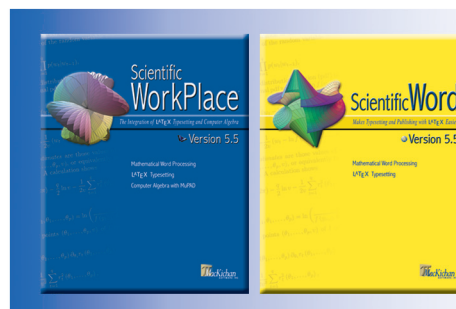
1. Type an expression in three variables.
2. With the insertion point in the expression, choose **Plot 3D Animated + Spherical**.

The next example shows a sphere that grows from radius 1 to radius 2.

**Plot 3D Animated + Spherical**

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