

# Free Dynamic Software for Exploring Multi-Dimensional Relations

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## **ABSTRACT**

This workshop introduces participants to Winplot, a free computer-graphing utility, available to everyone on the web. Winplot is simple to use and far surpasses the functionality of many other graphing utilities. This workshop will use Winplot for exploring mathematical concepts spanning pre-algebra to calculus III. Illustrations will come from algebra, pre-calculus, trigonometry, systems of equations, calculus, surfaces of revolution, and 2- and 3-dimensional graphs. Winplot can draw, shade, and animate curves and surfaces. The slider feature of Winplot will be applied for guiding students to discover the impacts of parameters on a graph's shape, extreme values, and roots. Participants will engage in a series of activities associated with each of the above topics and gain competence in using Winplot in mathematics education. It is a powerful and dynamic piece of instructional software that also produces gorgeous hard copies of 2- and 3-dimensional graphs. Winplot is a stand alone computer graphing utility for Windows (95/98/ME/2K/XP/Vista). In addition to English, it comes in the following languages: Croatian, Dutch, French, German, Hungarian, Italian, Korean, Lithuanian, Portuguese, Russian, Slovak, and Spanish.

## **Keywords**

Free, computer-graphing utility, 2- and 3-dimensional graphs, algebra to calculus III.