

Meeting: 1003, Atlanta, Georgia, MAA CP F1, MAA Session on Mathlets for Teaching and Learning Mathematics

1003-F1-885 **Robert J Decker*** (rdecker@hartford.edu), Department of Mathematics, University of Hartford, 200 Bloomfield Ave, West Hartford, CT 06117. *The Synergy of Mathlets and Computer Algebra.*

Mathlets fill a gap left by computer algebra systems; rather than providing a generic environment for solving problems and generating graphs. The combination of computer algebra with mathlets allows an even greater degree of flexibility in the investigation of mathematics problems.

I have developed some interactive programs (mathlets) for investigating the graphs of functions, parametric curves, differential equations, and data points. With these programs one can dynamically change parameters or initial conditions and see the results immediately in multiple views. The results can then be imported into Maple for further refinement there, and for report writing. Also, expressions from the mathlet can be brought into Maple, operated on there (equations solved, derivatives taken), with the results brought back into the mathlet. I will demonstrate this process using examples taken from precalculus through differential equations. I will close with a discussion of how you can create your own customized applet using the tools that I have developed. (Received September 30, 2004)