

**sTEem-at-Work**  
Puzzle #10  
**Optical systems Tech**

Yep, I did it again! No previous puzzle data analysis this time either however, another great puzzle. This time a technician for a laser research company is responding to a complaint that the beam is not steady. The initial thought is that the optics table is vibrating because one or more of the table's shock absorbers is not working properly. The tech has obtained data about the table's complete vertical displacement response to an applied test force and plotted that information.

The tech knows the following facts:

1<sup>st</sup>, the plot of force applied to one of the shock absorbers of the optical bench vs. the vertical motion of the table is a hysteresis loop.

2<sup>nd</sup>, if the shock absorber is working correctly, the loop will show that the initial force is absorbed by the shock absorber and the table's initial vertical motion is minimal.

**Is the shock absorber malfunctioning? (yes or no)**

