

# Introduction to her Mathematics

Olga studied the field of Matrix Theory. She took a job at the National Physical Laboratory in London to investigate flutter.

In flight, interactions between aerodynamic forces and a flexing airframe induce vibrations. When an airplane flies at a speed greater than a certain threshold, those self-excited vibrations become unstable, leading to flutter. Hence, in describing an airplane, it's important to know what the flutter speed is before the aircraft is built and flown (Math Trek, 1).

Engineers used differential equations to estimate this flutter speed and this process led to finding the eigenvalues of a square matrix. Olga used a theorem called the Gerschgorin Circle Theorem to locate these eigenvalues graphically.

