Self-Motion Mechanism Services

Self-motion is the most recent Innovation announced by Dynamic Transients, Inc. (DTI). Since the mid-1980's, DTI has emphasized the value of interdisciplinary approach to solving modern engineering and science problems. In addition, DTI has specialized in clarifying the dynamic transient phenomenon and its adverse effects in the design of aircraft, spacecraft, launch vehicles, nuclear power reactors and other modern systems. Call us for any of the Services listed below:

Lectures and Demonstrations

Our technical papers (see Papers Section) give step-by-step instructions to construct self-motion models. Yet, your experts can benefit greatly from seeing first-hand our motion models. We will be glad to arrange on-site demonstrations (see Products Section).

R&D Centers

Self-motion will find many and diverse applications in the Third Millenium. We are available to help you start R&D facilities to develop self-motion in medical, aeronautics, industrial, robotics, toys and other areas.

Failure Analysis

Do you have symmetric sources of vibration in any of your systems, e.g., two, four, or eight strap-on boosters on a launch vehicle, two or four engines on an aircraft or two air-conditioning units on a roof? Our self-motion models show how mechanical pulses can modulate to produce (orthogonal) stresses completely unaccounted for in previous designs. We can help you devise experiments to measure the stresses and/or provide the analysis required to quantify the magnitude of the stresses.

Eliminate Medical Accidents

Surgeons, dentists and other medical experts will find the demonstrations and explanation of our self-motion mechanism to be useful in eliminating accidents. We conducted thousands of tests to study how the self-motion mechanism interacts with the human body, including the motion of fingers, hands, arms and the whole body. The results are very useful to medical experts.

For example, sudden, unexpected and unplanned motion of the arm can result from the modulation of the muscles' internal pulses with external pulses generated by a surgical rotary device. In Classical Mechanics, pressure applied with the fingers on a sharp scalpel or a drill is considered harmless – The action-reaction force pair is supposed to add up to zero force and zero motion. Our self-motion research shows how the supposedly ineffective forces can actually couple or modulate to also produce sudden unplanned motions of the arm. Biologists, neuroscientists, physiologists, and athletic experts will also benefit from our services.

Ten years ago, Ali F. AbuTaha gave a series of Continuing Engineering Education Programs under the title, "***Anatomy of Failure Mechanisms in Modern Systems***." The Courses, interdisciplinary in nature, were given on-campus at the George Washington University and on-site at Government, Military and Industry Centers in the U.S. and abroad. The courses were attended by hundreds of military, aerospace and hi-tech experts. Sample critique from the attendees is given below:

"*Thought provoking course."*

"This was very informative and will influence critical thinking for sure."

"Outstanding – Very rewarding."

"*Excellent course for all … engineering fields."*

"*Content was very good but time* (three days*) was too short."*

"Method applicable to any investigative process."

"Excellent – Mr. AbuTaha communicates very well … Holds your interest."

"I can't believe how much I understood."

"*Course material was appropriate for all engineering disciplines."*

"Lecturer's method of presentation caused the listener to continuously track the diverse information as presented and "build" the rationale for solution."

"*Mr. AbuTaha's evaluation of the case studies was very thorough which helps drive home the required process for properly evaluating failure mechanisms."*

"His presentation was fantastic."

"*Instructor was very knowledgeable and had interesting/pertinent personal instances as analogies. Subject matter would greatly benefit co-workers."*

"I found the entire course extremely interesting and potentially beneficial relative to my job responsibilities."

"*Provided me with a different philosophy on investigating every possible aspect of a failure."*

We like to add your voice to these comments. Order our Services Today.