

## Miscellaneous EE Topic Suggestions

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Paper airplanes: plenty of variables, none too easy to control, lots of opportunities of 'personal engagement', cost of materials: minimal.

Rubber bands: change temperature, expose to sunlight, soak in vegetable oil ... could even try to fry them!

Combine oil and sun: "Effect of sunscreen and sun exposure on the elastic limit of a rubber band"

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There are some interesting questions in the Tsokos book, that may give some(one) EE-ideas.

For example this: (Tsokos 5th edition question 2.4.5 - page 73)

A mass is hanging from a string that is attached to the ceiling. A second piece of string (identical to the first) hangs from the lower end of the mass.

Which string will break if:

- a) the bottom string is slowly pulled with ever increased force;
- b) the bottom string is abruptly pulled down?

- I guess there are many many possible things to investigate related to this theme. One of my students recently did something on breaking strings/threads, inspired by this particular question. In the end his experimental setup turned out quite far from the original situation, by the way, but that's not a problem :-)

Best regards,  
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