

# How To Break an Uncooked Spaghetti in Half ?

Understand spaghetti dynamics

Valentine SOTO & Emilie DRAPEAU

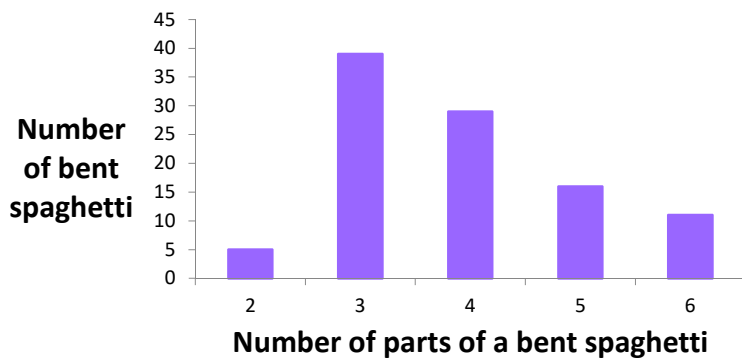
## 1. Context

During many years, breaking a spaghetti in half by bending it evenly from both ends intrigued many scientists : they conjectured that it wasn't possible.

Recently, two MIT students, Heisser and Patil, succeeded to break spaghetti in two.

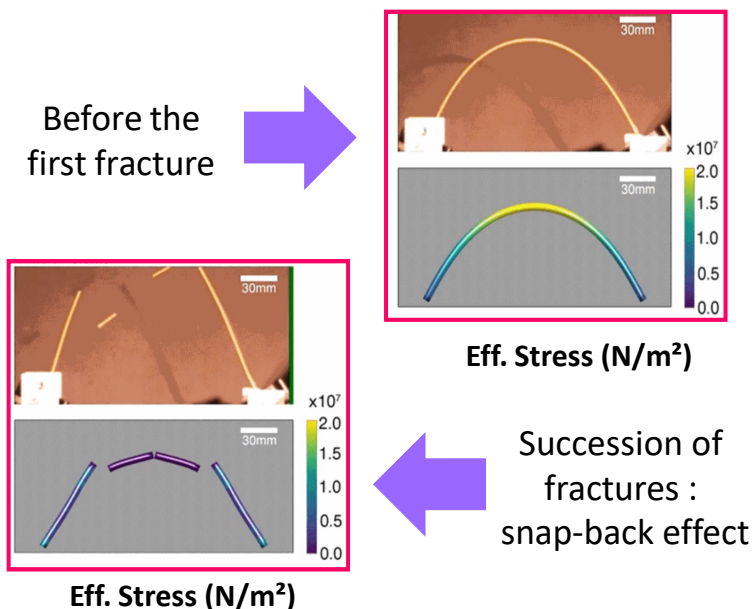
## 2. Bending isn't the solution...

### A. Our experiment

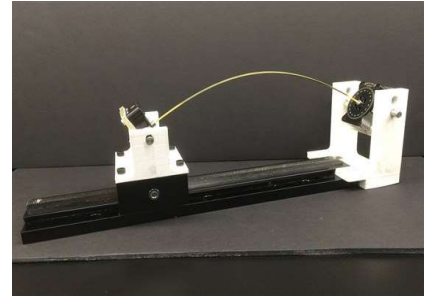


Usually, spaghetti break into at least three parts

### B. Their experiment



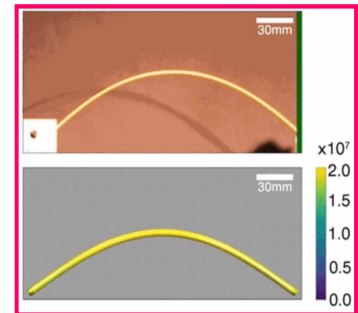
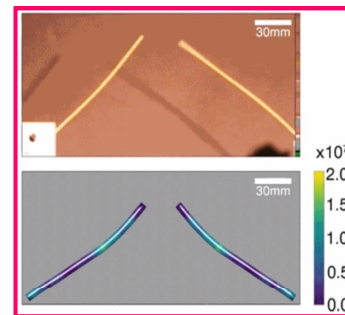
## 3. ... A twist must be added



MIT machine which :

- twists the spaghetti at almost 360 degrees
- slowly bends it to its breaking point

After the twist



Eff. Stress ( $N/m^2$ )

One fracture : correction of the snap-back effect

## 4. Conclusion

- The bending experiment explains why scientists venture their hypothesis.
- MIT students approached this issue in a different way and consequently solved it.
- This research is useful to understand the mechanics of fractures of long, thin and cylindrical rods such as spaghetti.