



Contribution ID: 68

Type: **not specified**

## **Marble-ous DOE - A fun 3D-printed teaching tool for the classroom**

*Tuesday, 17 September 2024 15:25 (20 minutes)*

The “DOE Marble Tower” is a modular 3D-printed experiment system for teaching Design of Experiments. I designed it to solve one primary weakness of most DOE exercises, namely to prevent the ability of the experimenter to simply look at the system to figure out what each factor does. By hiding the mechanics, the DOE Marble Tower feels much more like real processes where the only way to know the causes of changes in the response for sure is by experimentation.

The tower is designed to work well in any classroom exercise, being easy to setup and change the settings of, having a low noise response (time for a marble to run through) and it produces nice sounds to boot!

In this session I’ll introduce the tower and give a couple of examples of how to integrate it in teaching, after which participants are free to play with it along with their DOE software of choice!

### **Type of presentation**

Talk

### **Classification**

Both methodology and application

### **Keywords**

Design of Experiments, teaching, exercise equipment

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**Session Classification:** Teaching statistics

**Track Classification:** DoE