

## **THUNDERBOLTS AND LIGHTNING – ARE THEY REALLY FRIGHTENING?**

### **About the talk**

Paraphrasing that famous line from Queen's Bohemian Rhapsody, Research Engineer and science broadcaster Rhys Phillips will look at the phenomenon of lightning. In a light hearted and informative talk, Rhys will explain the processes which lead to a lightning strike and the different types of lightning that can exist. He will then move on to show what happens to aircraft when they are hit by lightning and explain how we protect against damage from this. This talk will also give the audience a chance to see exactly what happens in our lightning lab and answer the question that everyone is asking – can a piggy bank survive a lightning strike?!

(If requested, as part of the talk and depending on the nature of the audience, Rhys can also touch on the wide range of opportunities there are for exciting careers in engineering.)

### **About the speaker**

Rhys Phillips is a research engineer at Airbus Group in Newport where he has worked since 2009. He graduated from Cardiff University in 2008 with a joint honours degree in Mathematics & Physics. In October 2016, he was made an honorary lecturer at the School of Physics & Astronomy. He is an award winning science presenter, presenting science stage shows to schools and the general public around the world having recently presented in Guadeloupe, New Caledonia, Morocco, Australia and New Zealand. Rhys is also an experienced broadcaster presenting his own weekly jazz and science radio shows as well as being a regular guest on BBC national and regional radio. Rhys volunteers in numerous roles for the Institution of Engineering & Technology within the South Wales Local Network, the Electromagnetics Technical Network and the Young Professionals Community Committee. He represents Airbus Group as part of the National Centre for Universities and Business' 'Future Leaders Network', and is a member of the Queen Elizabeth Prize Young Search Group, the Wales Festival of Innovation stakeholder group and the Welsh Government Cross Party Group on Science & Technology. Rhys is a trustee of Volunteer Community Services (Cymru) Ltd, co-founder of both Cardiff Science Festival and Cardiff Jazz Festival and when not behind a microphone or in the lab, he can be found performing on stage with his jazz band, Imperfect Tenth or calling ceilidhs.

### **Audiences & Show Length**

This talk is available in several different versions suitable for different audiences (primary school, secondary school, university students, families, the general public...) and can be adapted to fit a time slot anywhere from 30 to 120 minutes (including questions). It is most commonly delivered at a length of 60-90 minutes including questions.

### **Room / Tech Requirements**

- A large-ish table at the front of the room
- Ability to plug laptop into both a projector and speakers / sound system
  - o the laptop has native VGA and DisplayPort outputs and I have adapters to output to DVI & HDMI if required
  - o the audio output (3.5mm jack) is on the opposite side of the laptop from the VGA port so combined VGA/audio cables are often not suitable as the audio lead won't stretch across the laptop
- Amplification via microphone & PA system for large rooms/audiences
- Ability to darken the room (closing window blinds, turning lights off) for certain parts of the show
- Power sockets at the front of the room

### **Performance Fee**

Reasonable expenses (travel, meals and accommodation where appropriate) will be claimed. Separate performance fees are applicable depending on the nature and location of the event.