



# MATHEMATICAL EDUCATION ON MERSEYSIDE

Registered Charity No. 517028

## ORBITER

2018  
JANUARY

MEM Orbiter can be downloaded free of charge from [www.mathsmerseyside.org.uk/](http://www.mathsmerseyside.org.uk/)

### Liverpool Mathematical Society (LivMS)

Popular lectures suitable for everyone Year 11 and up:

**Thursday 1st March 2018**  
University of Liverpool  
(room to be confirmed)

#### 'Why do pigs and Boomerangs fly?'



#### Jonathan Histed

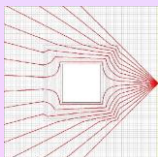
Jonathan demystifies gyroscopes and rotational dynamics, showing why pigs and boomerangs fly in circles. An interactive session with counter intuitive demos, culminating in understanding, building and flying your own cardboard boomerang.



**Wednesday 18th April 2018**  
(venue to be confirmed)

#### Wave Cloaking and the Millennium Bridge ('Wibbly Wobbly Bridge') Problem

**Professor Alexander Movchan**  
(LivMS President)



This lecture is about mathematics of waves. Waves in structured solids may have interesting and unusual properties. A bridge, for example, can be viewed as a waveguide, and waves can be controlled, so that vibrations are suppressed. Waves can also be routed around objects by special coatings, 'invisibility cloaks'. The lecture explains the theory standing behind these interesting phenomena and includes practical examples.

Check the LivMS website for venues and rooms: [www.livmathssoc.org.uk/](http://www.livmathssoc.org.uk/)

Both lectures 5:30PM to 6:30PM

No tickets. Free admission to all students and full members of LivMS  
Others £4.00 payable on the door.

### MEM Challenge & Senior Challenge, LivMS Open Challenge

Copies of these **take-home competitions** for pupils in **Y7/8** (Challenge), **Y9/10** (Senior Challenge), and **Age 18 and under** (Open Challenge) will be mailed directly to Heads of Maths in all secondary schools by 31 January 2018, and can be **downloaded** from the websites below. They should be made available to pupils over **February half-term 2018**. Participation is **FREE**.

Further details at [www.mathsmerseyside.org.uk/](http://www.mathsmerseyside.org.uk/) and [www.livmathssoc.org.uk/](http://www.livmathssoc.org.uk/)



### MEM Y8/9 Masterclasses

The 27th Series was attended by 60 pupils from 32 schools. Venues for the 5 sessions included in turn the campuses of all 3 Liverpool-based universities.

[www.mathsmerseyside.org.uk/](http://www.mathsmerseyside.org.uk/)



**Bursaries** are available (£50 to £500) through the LivMS **Bursary Fund** (charity number 1156909) for teachers, student teachers and pupils. The next deadlines are 31<sup>st</sup> January 2018 and 31<sup>st</sup> May 2018.  
[www.livmathssoc.org.uk/](http://www.livmathssoc.org.uk/)

### Workshops for Y12/13

Year 12/13 after school problem-solving workshops, Contact Martin Bamber, [mbamber@liv.ac.uk](mailto:mbamber@liv.ac.uk)

**Join LivMS** for details see [www.livmathssoc.org.uk/](http://www.livmathssoc.org.uk/) Membership

**FunMaths Roadshow** is now available in English and Welsh versions. For more details and to order go to [www.livmathssoc.org.uk/](http://www.livmathssoc.org.uk/) and click on FunMaths Roadshow.

### LivMS Sixth Form Pop Maths Quiz



The 14th annual Quiz will be held on **Saturday 10th March 2018**

Liverpool John Moores University  
Byrom Street Campus

**10:00AM to 2:00PM**

This is a team competition which runs a bit like a Pub Quiz but without any alcohol! Prizes are awarded on the day.

**Details and application forms are now available at:**  
[www.livmathssoc.org.uk/](http://www.livmathssoc.org.uk/)

The Pop Maths Quiz is sponsored by Liverpool John Moores University, and WH Smith.

### Contact MEM

[www.mathsmerseyside.org.uk/](http://www.mathsmerseyside.org.uk/)

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MEM and LivMS are pleased to acknowledge generous financial help received during the past 12 months from Liverpool Hope University, Liverpool John Moores University, Mercer Limited, P H Holt Foundation, University of Liverpool, W.H.Smith Promotions Ltd.