

# Mathematics at the ESOF2012 in Dublin

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The “European Science Open Forum 2012” (ESOF2012) took place in Dublin, Ireland, 11–15 July. It was the third ESOF congress; the first was held in Barcelona in 2008 and the second in Torino in 2010; the next one will take place in Copenhagen in 2014.

The primary aim of these congresses is to bring scientists of different fields together to exchange ideas and information. The second is to use the time of the congress for public awareness activities.

ESOF2012 attracted the attention of more than 5000 participants. The venue of the “scientific part” was the Dublin Convention Centre (DCC), a building with a spectacular design that opened in 2010 by the River Liffey. Some of the public awareness projects took place there whilst others were organised in the streets in the centre of Dublin.



The DCC

On each of the five days there was a rich programme. Among the keynote speakers were Sir Bob Geldof (musician and political activist), Enrico Giusti (“Mathematics at the Museum”), Rolf-Dieter Heuer (Director of CERN), Marcus du Sautoy (“The Secret Mathematicians”), Craig Venter (genomic research) and James Watson (one of the discoverers of the structure of DNA).

Several activities at ESOF2012 were concerned with mathematics. In the public awareness part Steve Humble, a member of the EMS Raising Public Awareness committee, realised a “maths busking” project<sup>1</sup> and some Irish colleagues showed their presentations in the Convention Centre (see [www.mathsweek.ie](http://www.mathsweek.ie) for more details). Besides Giusti’s and du Sautoy’s talks the scientific part offered a panel discussion on medieval mathematics and a talk by the authors of this article.

The EMS nominated speakers for ESOF2008 and ESOF2010, and in February 2012 we were asked to

present a talk for ESOF2012 on the connections between mathematics and music, a subject on which we have both given lectures for many years.



RPA activities (left); the authors (right)

Our presentation took place on Sunday 15 July, the last day of the congress. We were very happy to see that *Mathematics you can hear* attracted about 200 participants. Here is the summary: “Scales and temperament” (by RW: the mathematical foundation of our scales); “Sine waves – the atoms of sound” (by EB: one can hear the predictions of Fourier analysis); “Symmetry and Music” (by RW: how geometrical ideas were used in classical and contemporary compositions); “Can one hear the shape of a drum?” (by EB: on the Kac problem). At the beginning we gave a short description of the role of the EMS and the efforts towards raising public awareness (mentioning the website [www.mathematics-in-europe.eu](http://www.mathematics-in-europe.eu)).

We had an electronic keyboard at our disposal that was used to illustrate the theoretical explanations, as well as many audio files and a film (with Bach’s crab canon, a musical version of the Moebius strip).

After the numerous discussions after our lecture it is clear to us that many participants of the congress were very interested to learn more about the connections between mathematics and other fields. We recommend strongly that the EMS be present at the 2014 ESOF congress in Copenhagen.

<sup>1</sup> The verb ‘to busk’ means ‘to perform in the streets’.