



November 2017

RADIO SOCIETY of GREAT BRITAIN
CITY of BRISTOL GROUP
NEWSLETTER

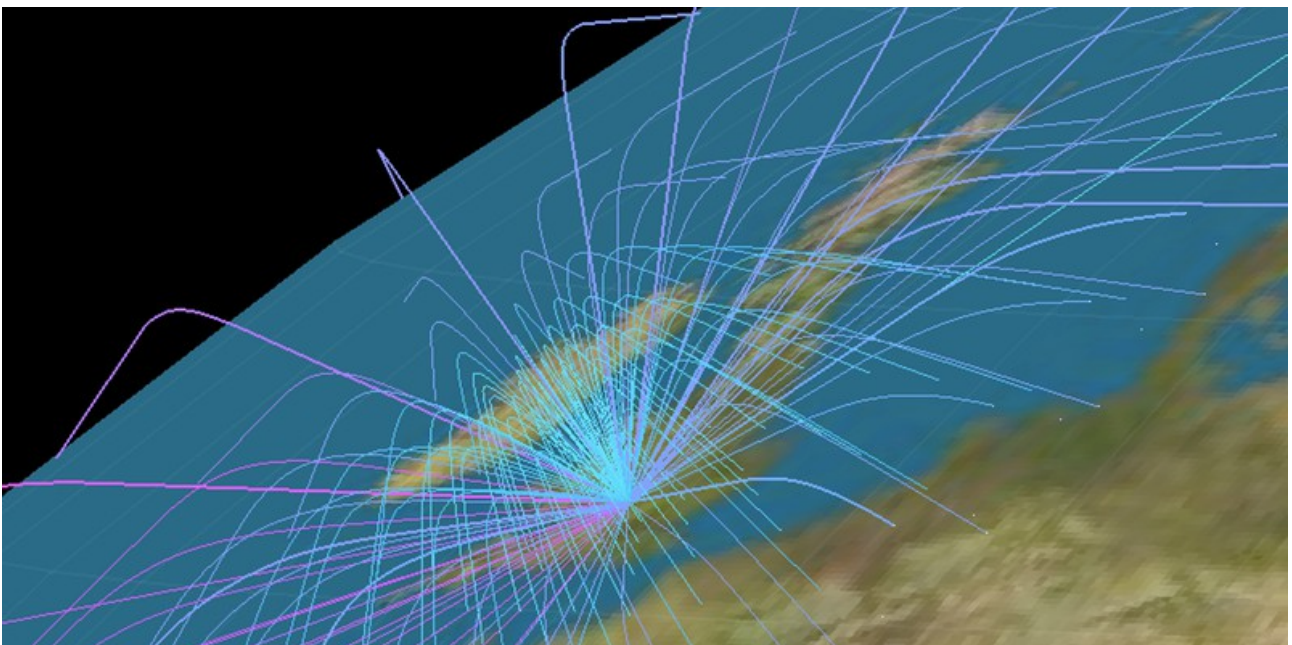
Monthly meetings at the BAWA, 589 Southmead Road, BS34 7RF

NEXT MEETING MONDAY 27 NOVEMBER 7.30pm

HF PROPAGATION

Professor Cathryn Mitchell M0IBG

The talk will give a brief overview of the history of HF propagation starting with the early work of Marconi, leading through to the importance of HF during the second world war and then discussing the present day research in this area. Opportunities for radio amateurs to contribute to modern HF propagation experiments will be outlined and there will be time for discussion.



The picture shows ionospheric propagation paths at 2MHz HF for a transmitter placed in Milton Keynes.

THE CHALLENGE OF BIG DATA

Professor Chris Budd G4NBG



At our October meeting, we were presented with a fascinating insight into the very modern subject of Big Data. Chris started by outlining his background; he works in the Maths Department of Bath University, but before entering academia, worked for Marconi and the CEBG. As a student, he was President of the Cambridge Wireless Society (G6UW).

Big Data is all around us and we are leaking data all the time. Every time we use a credit card or an Oyster card, this generates data about where we are, what we're spending etc. One of the biggest generators of data is the mobile 'phone. Although the conversations are encrypted, the fact that we are using it, whom we are connected to and where we are is not. This Meta Data can be analysed and yield important information. GCHQ use it to target organised crime and terrorism. Retailers use data to bombard us with targeted advertisements, based on previous purchases and the information they have derived about us. It is very easy for them to determine our age, height, gender, education, family size and political leanings. All of this has given rise to a huge modern industry and is what companies like Google are based upon.

However, it is interesting to note that the Royal Institution still maintains its records on paper. The problem with modern data storage technology is that it quickly becomes obsolete quickly; who for example now uses floppy discs? In a hundred years time, people will still be able to read the printed page.

Chris asserted that the first data signal was Morse code, with a speed of 2 bytes/s. The teleprinter achieved 10 bytes/s and modems 1kb/s. Early computers had 1kb of RAM, now 1TB on a laptop is quite common. The internet contains one zettabyte of vaguely defined information (one followed by 21 zeroes). How do we separate the information we want from the remainder, in radio terms, separate signal from noise?

The internet is only 20 years old as mass participation phenomenon. The UK is the worlds leading user of the internet, far more so than the USA; 80% of us are on the internet. Only Germany and Korea approach this level.

Facebook was only founded in 2004, but has two billion registered users, nearly a third of the world's population. Most of the data on the internet is in the form of pictures.

Google holds 10-15 Exabytes of data in eigenvectors in matrices. It was founded by two computer scientists, makes \$66billion a year from placing adverts by machine algorithms. There are more mobile 'phones in the world than people. The next generation - 5G – is now being developed and will use frequencies in the 70GHz region to provide more bandwidth. Bristol University is leading the world in this technology and it is likely that there will be early trials of 5G in Bristol.

The widespread adoption of smart meters in every home over the next few years will generate vast amounts of new data. It will be very easy to determine if a house is occupied; who will have access to that knowledge? Current challenges are dealing with the sheer volume of data and separating useful information from the noise. Future challenges will include the internet of things; when household appliances are connected to the internet and start exchanging information with each other and who knows whom else? There are many ethical issues about privacy and the ownership of data. Algorithms will start to work out what we are thinking and be used to make decisions about us, for example; whether a certain health treatment is likely to be worthwhile. Do we understand how these decisions are made and are they reliable? The volume of data will continue to accelerate and its effect on our lives will be even greater in the coming years.

NEWS BRIEFS

AGM & committee meeting;

Your committee will be meeting on 15th November. One issue to be discussed is nominations for the Officers & committee members for 2018. The AGM will take place on 29th January and it essential that a new Secretary be elected then.

Venue for 2018;

We have booked the BAWA for our meetings in 2018. The move from Redland Tennis Club seems to have been very successful and meeting attendance's have risen. One complaint has been that in Room 7, people towards the rear of the room cannot see the screen or hear the speaker too well. To address this, we have booked Room 4 for our 2018 meetings. This is a larger room and will enable wider rows of seats, closer to the front. It is more costly to hire, but hopefully rising membership and attendance will cover most of this increase.

RALLIES & EVENTS

A selection of radio rallies & events within reasonable travelling distance of Bristol.

19 November	Plymouth Rally Plympton
29 December	Yeovil ARC Table Top Rally Sparkford
11 February	Harwell Radio Rally Didcot
25 March	Wythall Radio Rally South Birmingham
15 April	West London Radio & Electronics Show Kempton Park Racecourse
24 June	West of England Radio Rally Frome
4 November	West London Radio & Electronics Show Kempton Park Racecourse

2018 LECTURE PROGRAMME

We are currently trying to book the lecture programme for 2018.

There are nine meetings where we have a talk. Two of these are presently booked – February and April. This leaves seven more to book. Can you help? We are looking for ideas of people who can give a talk for about 45 minutes and then answer some questions. Even better, will you volunteer yourself? There are lots of people in our group who could do this. It doesn't necessarily have to be about amateur radio, because some of our most interesting talks have been about other subjects. Perhaps you may not be confident to fill a whole 45 minute slot on your own. This doesn't matter, because we could pair two such people to give two short talks. Please give this serious consideration, the more people that are involved in planning the lecture programme, the more varied and interesting it will be.

AROUND THE LOCAL CLUBS

Bath & DARC <http://badarc.webs.com>

Chepstow & DARC www.gw4lwz.co.uk

Chippenham & DARC www.g3vre.org.uk

Mid-Somerset ARC www.midsarc.org.uk

North Bristol ARC www.nbarc.org.uk

Shirehampton ARC www.shirehampton-arc.org.uk

South Bristol ARC www.sbarc.co.uk

Thornbury & South Glos.ARC www.tsgarc.uk

Trowbridge & DARC www.tdarc.uk

Weston-super-Mare RS www.g4wsm.club

If your club has a major event or talk by a “star” speaker, send details to the secretary – g8vpg@aol.com – and I will be pleased to include it here. Also, please send reports & photographs of your recent activities and any news.