

Report – International Conference in Strongly Correlated Electron Systems 2017
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The International Conference in Strongly Correlated Electron Systems 2017 (SCES 2017) covered a wide variety of subjects in the area from various types of superconductors to multiferroics to quantum magnetism and frustration.

The attendance of this conference offered not only insight into my particular area of research (magnetism in quantum materials and novel superconductivity) but gave me valuable insight into areas I have not worked. Sessions dealing with magnetic frustration gave an excellent overview of current research in spin ices and spin liquids prompting me to consider possibly work on these systems myself in the future. Furthermore, a session entitled *New Techniques* gave a good synopsis of various techniques and their application in strongly correlated electron systems such as resonant inelastic X-ray scattering (RIXS), electron energy loss spectroscopy (EELS) and inelastic neutron scattering (INS).

Plenary sessions were particularly informative with the first plenary talk of Peter Armitage (*Low energy electrodynamics of correlated spin systems*) showing the use of THz spectroscopy specifically in the study of spin ices able to yield g-factors of the studied compounds. This talk was particularly useful to myself as a short discussion of complex magnetic susceptibility was included which most of my work is focused on. As such, I now have a new avenue of investigation to pursue when considering the commonalities of various typed of systems when measured via a.c. magnetic susceptibility. The plenary talks of Robert Cava and Todadri Senthil were also particularly interesting. Robert Cava discussed the ways he and his group develop new novel electronic materials which gave an informative view of sample growth for those not involved. Todadri Senthil presented a theory talk that proved very interesting to an experimentalist such as myself, highlighting the method of mapping a real problem on to an effective model to derive a solution. A simple example of this was the 2D Ising model where rather than discussing spins in a lattice we instead discuss domain walls.

Presenting a poster and attending other poster sessions were extremely valuable experiences allowing fruitful interactions with other scientists. As an international conference, attendees were from a wide range of backgrounds presenting an excellent opportunity to explain my work to those unfamiliar with it. This also led to a number of discussions which at the very least have allowed me to put names to faces.

As such, SCES 2017 proved to be a very useful conference to attend, yielding both information that is directly applicable to my research and giving an interesting overview of related research. The communal aspect of the conference was also very rewarding socially and has opened the opportunity for possible collaborations in the future.