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Research project: On the treatment of correlated observation errors in data assimilation

I did my undergraduate degree at the University of Bath, with a year abroad at Université Joseph Fourier in Grenoble, France. During the final year of my MMath I predominantly studied Applied Maths modules, after covering lots of pure topics during my time in France. My degree didn't offer a huge amount of project work, so I did a summer project before my final year. This evolved into an 11 week assessed project, looking at modelling a specific physical phenomenon in Matlab. During this project I discovered how much I enjoy doing research, and that it was something I was capable of doing well. I also realised when I was looking at the jobs market prior to graduating, that I would have a much better chance of having a career doing interesting mathematics (still my end goal) if I did a PhD beforehand.

MPE CDT appealed to me due to the broad amount of choice on offer in terms of projects – I really had no idea when I started what sort of topic I wanted to investigate. The application area also really interested me; I find doing maths that is useful very motivating, and weather and climate is an area with so many options for looking at important real-world problems. I tried an MRes project that married lots of different areas I enjoyed at undergrad – lots of Numerical Linear Algebra, along with coding and designing numerical experiments on both a small scale, and later on at the Met Office. I absolutely loved it, and am continuing with the same topic (Data Assimilation) for my PhD. I had never heard of Data Assimilation before starting on the program, and although I had a decent background in applied maths, I had nowhere near as much experience in pure maths or statistics as some of my peers. Alongside my PhD I have also had many other personal development opportunities, including paid teaching and marking work, placements at the Met Office and attending a conference in Brazil.

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