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Approaches to understanding tumour-immune interactions

The presence of immune cells within solid tumours was initially viewed positively, as the host fighting to rid itself of a foreign body.

However, we now know that the tumour can manipulate immune cells so that they promote, rather than inhibit, tumour growth. Immunotherapy aims to correct for this by boosting and/or restoring the normal function of the immune system. Immunotherapy has delivered some extremely promising results.

However the complexity of the tumour-immune interactions means that it can be difficult to understand why one patient responds well to immunotherapy while another does not. In this talk, we will show how mathematical, statistical and topological methods can contribute to resolving this issue and present recent results which illustrate the complementary insight that these different approaches can deliver

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