

**Maria Carmen Reguera**  
(University of Birmingham)

*Weighted theory for the Bergman projection, a theory of  $B_\infty$*

The Bergman space  $A^2(\mathbb{D})$  is the closed subspace of  $L^2(\mathbb{D})$  consisting of analytic functions, where  $\mathbb{D}$  denotes the unit disk. One considers the projection from  $L^2(\mathbb{D})$  into  $A^2(\mathbb{D})$ , such a projection can be written as a convolution operator with a singular kernel. In this talk, we will present the recent advances on the one weight and two weight theory for the Bergman projection that resulted from combining techniques from complex analysis and the theory of singular integrals in harmonic analysis. We will pay special attention to the development of a  $B_\infty$  theory and its applications in Operator Theory. This is joint work with A. Aleman and S. Pott.