

Unveiling the invisible - mathematical approaches for virtual image restoration

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In this talk I will discuss mathematical approaches based on partial differential equations and variational models for the virtual restoration of paintings and illuminated manuscripts. The latter in particular provide an interesting opportunity for digital manipulation because they traditionally remain physically untouched. Showcasing restoration examples we have derived in collaboration with the Fitzwilliam Museum in Cambridge, I will also explain the main mechanisms behind the mathematical methods used.

My presentation will include joint works with Spike Bucklow (Hamilton Kerr Institute, Cambridge, UK), Luca Calatroni (Ecole Polytechnique, Paris, France), Marie D'Autume (ENS Cachan, Paris, France), Rob Hocking (Faculty of Mathematics, Cambridge, UK), Stella Panayotova (Fitzwilliam Museum, Cambridge, UK), Paola Ricciardi (Fitzwilliam Museum, Cambridge, UK) and Simone Parisotto (Faculty of Mathematics, Cambridge, UK).