

An Integrated Algorithm for Motion Deblurring and Novel Blurring

Ian Tagge

Single Exposure Photography

- Shutter opens and remains open for the duration of the exposure
- Motion blur may result from camera motion or subject motion
- Subject smears across image by convolution
- Deblur by deconvolution is an ill-posed problem

Coded Exposure Photography

- Digital SLR fitted with a controllable liquid-crystal shutter
- Shutter ‘flutters’ open and closed according to a predefined pattern
- Deblur by deconvolution becomes a well-posed problem



Coded Image



Solve $A * F = F_{\text{blurred}}$ for F



Novel Reblur with

$$A * F = F_novel$$


MATLAB GUI

