



In blue the fine
 $M=8 \times N=8$ mesh.

In black its ghost cells

In red the coarse

$M=4 \times N=4$ mesh

In green its ghost cells

For the restrict operator

$$r_{i+1,j+1}^{2h} = \frac{1}{4} \sum_{k=1}^2 \sum_{l=1}^2 r_{i+k,j+l}^h$$

$$i = 1, 2, \dots, M^{2h}$$

$$j = 1, 2, \dots, M^{2h}$$