



L: Born modeling operator
L': RTM operator
S: Source wavefield
R: Receiver wavefield
 $\delta \mathbf{S}_g$: Source scattered wavefield (in grad.)
R_f: Residual wavefield
 $\Delta \mathbf{r}_k$: Perturb. in reflectivity (refl. image)
 $\delta \Delta \mathbf{r}_k$: Perturb. in reflectivity update
 \mathbf{f}_k : Residual
 $\delta \mathbf{f}_k$: Residual update
 \mathbf{g}_k : Gradient
 \mathbf{G}_k : Gradient projection onto data space
 α & β : Scalar steps

- Initialization:
One **S** fwd-prop.
- Each iteration:
One **S** bwd-prop.; one **R_f** bwd-prop.
One **S** fwd-prop.; one $\delta \mathbf{S}_g$ fwd-prop.

TOTAL No. PROPAGATIONS: $4n_{iter}+1$