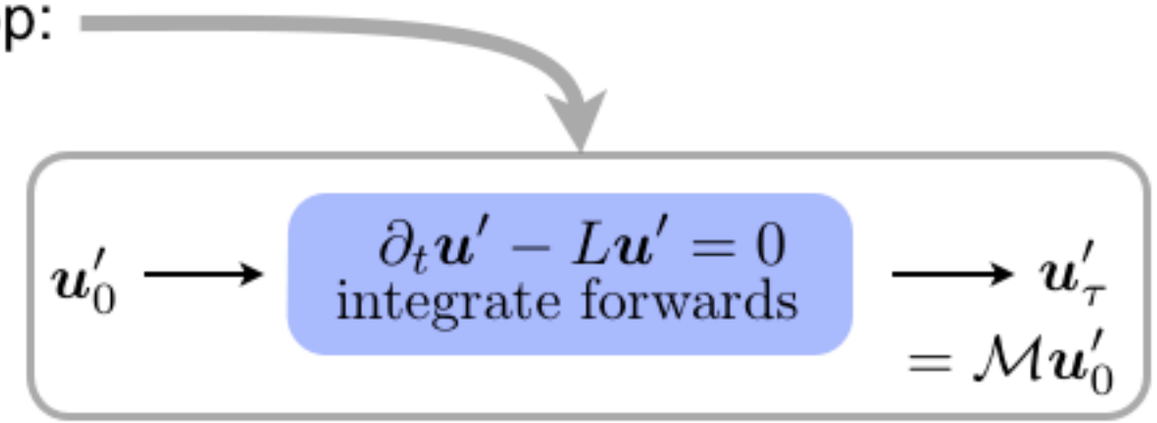
Outer loop: based on repeated application of operator $\mathcal{M}$ on an initial vector.

1. Generate a Krylov subspace *T* of dimension *N* × *k* (where *N* >> *k*) by repeated application of $\mathcal{M}$ via inner loop:

$$T = \{\boldsymbol{u}'_0, \mathcal{M}\boldsymbol{u}'_0, \mathcal{M}^2\boldsymbol{u}'_0, \ldots, \mathcal{M}^{k-1}\boldsymbol{u}'_0\}$$



2. QR factorize matrix *T*

$$T = QR$$

3. Calculate (*k*×*k*) Hessenberg matrix *H* from *R*

$$h_{i,j} = \frac{1}{r_{j,j}} \left(r_{i,j+1} - \sum_{l=0}^{j-1} h_{i,l} r_{l,j} \right)$$

4. Calculate eigensystem of *H* in *k* × *k* subspace (e.g. LAPACK).
5. If converged, stop and project back to full space, else discard oldest vector in *T*, carry out one more integration of $\mathcal{M}$, go to step 2.