

1 stepped pressure equilibrium code : fc01aa

1. Given vector position returns force; uses finite differences to compute derivative matrix; planned redundancy;
2. The force vector, $\mathbf{F}(\mathbf{x})$, is a combination of the pressure-imbalance Fourier harmonics, $[[p + B^2/2]]_{m,n}$, and the spectral condensation constraints, $\partial M/\partial \lambda_j$.
3. The vector, \mathbf{x} , represents the geometrical degrees of freedom of the internal interfaces. This vector is ‘unpacked’ and the `iRbc`, `iZbs` arrays are assigned.
4. The following routines are called in parallel:
 - (a) `ma00ab` : allocates sub-grid geometric arrays, `igss`, `igst`, etc. in each annulus;
 - (b) if `Lderiv=T`, the Fourier harmonics of the internal interfaces is displaced by an amount `fdiff` and the derivative matrix is constructed by finite-differences.
 - (c) `ex00aa` : sets the position of the coordinate axis and innermost surface by extrapolation;
 - (d) `ih00aa` : constructs global coordinates by interpolating the interface Fourier harmonics;
 - (e) `ma00aa` : computes volume integrals of the geometric quantities;
 - (f) `ma02aa` : iteratively adjusts the helicity multiplier (and maybe poloidal flux) to match constraints, where the Beltrami fields are computed by `mp00aa`;
 - (g) `ma00ab` deallocates sub-grid geometric arrays `intgl`;

fc01aa.h last modified on 2012-05-08 ;
