# 1 stepped pressure equilibrium code : fe00ab

## Contents



### 1.1 outline

1. Calculates finite element functions, and their derivatives, at arbitrary radius.

2. This routine is a direct copy of `fe00aa`, whereas `fe00aa` calculates the radial basis functions on the fixed radial sub-sub-grid, and assigns values to the `felr` arrays, `fe00ab` calculates the radial basis functions at an arbitrary radial location. This information is is required for field line integrations, for example.

3. The output quantity `vphi(0:1,0:Nofe,0:2)` contains the following:
   `vphi(0,p,0)`$= \varphi_{0,p}$
   `vphi(0,p,1)`$= \varphi'_{0,p}$
   `vphi(0,p,2)`$= \varphi''_{0,p}$
   `vphi(1,p,0)`$= \varphi_{1,p}$
   `vphi(1,p,1)`$= \varphi'_{1,p}$
   `vphi(1,p,2)`$= \varphi''_{1,p}$

4. Note that the derivatives **with respect to x** are returned. Therefore, the scaling factor needs to be included elsewhere.

fe00ab.h last modified on 2012-05-01 ;