# fow-sequence routine dependence

#### 1 Code structure

# 1.1 fp\_menu

- $\bullet$  fp\_prep
- $\bullet$  fow\_prep
- fow\_loop
- $\bullet$  fp\_fout\_tot

### 1.2 fp\_prep

- $\bullet$  fp\_allocate
- $\bullet \ \, \mathrm{fp\_allocate\_ntg1} \\$
- $\bullet$  fp\_allocate\_ntg2
- $\bullet$  fp\_set\_nsa\_nsb
- $\bullet$  fp\_mesh
  - eq\_load
  - fp\_eq\_broadcast
  - eqcalq
  - eggetb
  - fp\_wr\_read
  - fp\_wm\_read
  - pl\_qprf
  - set\_rfsad
  - set\_bounce\_param
- fp\_set\_normalize\_parm
  - pl\_prof
  - read\_exp\_data
  - make\_exp\_prof
  - set\_initial\_disrupt\_parm
  - set\_post\_disrupt\_Clog\_f
  - set\_post\_disrupt\_Clog
- fnsp\_init
  - update\_fnsb\_maxwell
- $\bullet$  fnsp\_init\_edge

- fpmxwl\_edge
- update\_fnsb
- $\bullet$  read\_fit3d\_h
- $\bullet$  read\_fit3d\_d
- $\bullet$  sv\_weight\_r
- $\bullet$  spitzer\_sigma
- nf\_lg\_function
- $\bullet$  nf\_reaction\_coef
- $\bullet$  fp\_continue
  - fusion\_source\_init
  - define\_bulk\_np
  - fp\_coef
  - fpweight
  - source\_allreduce
- allreduce\_nf\_rate
- $\bullet \ prof\_of\_nf\_reaction\_rate \\$
- fp\_set\_initial\_value\_from\_f
  - $\ display\_disrupt\_initials$
  - fpssub
  - fpsglb
  - fpsprf
  - fpwrtglb
  - fpwrtprf

### 1.3 fow\_prep

- $\bullet$  fow\_allocate
- fow\_eqload
  - eqload
  - eqparm
  - eqfetp
  - eqgeqn
  - eqgetbb
  - eqgeta
  - first\_order\_derivative
- $\bullet \ \ bisection\_method$

- $\bullet$  fow\_orbit
  - load\_orbit
  - fow\_set\_obparm
  - construct\_orbit\_zero
  - construct\_orbit
    - \* ob\_calc
  - save\_orbit
- $\bullet \ \ search\_pinch\_orbit$ 
  - first\_order\_derivative
  - fow\_cal\_spl
  - solve\_quadratic\_equation
  - get\_pinch\_point
- $\bullet \ \ calculate\_jacobian \\$ 
  - mean\_ra\_quantities
- $\bullet$  load\_local\_com
- fow\_cal\_local\_coms
  - construct\_orbit
    - \* ob\_calc
- $\bullet$  save\_local\_com

### 1.4 fow\_loop

- $\bullet$  fI\_Maxwellian
  - $-\ mean\_ra\_quantities$
- $\bullet$  fow\_coef
  - convert\_fI\_to\_fu
  - fpcale
  - fpcalw
  - fp\_calc
  - bounce\_average
    - \* make\_U\_Dxy
    - \* transformation\_matrix
    - \* interpolate\_D\_unlessZero
- fow\_calculate\_source
  - fow\_set\_obparm
  - beam\_source
  - fow\_cal\_local\_coms

- $\bullet$  fow\_exec
  - fowweight
  - set\_fm\_imxta
  - fowsetm
  - IBC\_pinch
  - IBC\_X\_stagnation
  - IBC\_O\_stagnation
- $\bullet \ update\_bulk\_temperature \\$
- $\bullet$  coulomb\_log
- $\bullet$  fow\_coef
- fow\_calculate\_source
- moment\_0th\_order\_COM
- $\bullet$  moment\_2nd\_order\_COM
- $\bullet$  fp\_fout\_tot

# $1.5 \quad fp\_fout\_tot$

- $\bullet$  mean\_ra\_quantities
- fptxt1D/2D/4D
- $\bullet \ \, output\_neoclass$
- $\bullet$  output\_orbit\_classify
  - prep\_orbit\_classify
  - pinch\_orbit
    - $* \ get\_pinch\_orbit$
  - D\_orbit
  - stagnation\_orbit
  - stagnation\_type
  - fptxt1D/2D/3D
- $\bullet \ moment\_0th\_order\_COM \\$
- $\bullet$  moment\_2nd\_order\_COM
- fptxt1D/3D/5D