

Understand Your Code: a short tutorial

The screenshot displays the Understand IDE interface. The top menu bar includes File, Edit, Search, View, Project, Reports, Metrics, Graphs, CodeCheck, Annotations, Tools, Window, and Help. The Project Browser on the left shows a tree view of source files, with 'src_radiation.f90' selected. The main workspace shows a call graph for the 'fesft' routine. The graph starts with 'Imorg' (Imorg.f90) calling 'dfi_initialization' (dfi_initialization.f90), which calls 'organize_physics' (organize_physics.f90), which in turn calls 'organize_radiation' (organize_radiation.f90). 'organize_radiation' calls 'fesft' (src_radiation.f90). From 'fesft', the flow branches into several sub-routines: 'opt_th' (src_radiation.f90), 'opt_so' (src_radiation.f90), 'inv_so' (src_radiation.f90), 'inv_th' (src_radiation.f90), 'coe_so' (src_radiation.f90), and 'coe_th' (src_radiation.f90). These sub-routines then call various mathematical functions: 'LOG', 'PRESENT', 'MIN', 'ABS', 'SIGN', 'SQRT', and 'EXP'. The 'MAX' node is also shown as a target of the flow. The bottom panel shows search results for 'fesft', listing various lines of code and comments related to the routine.

```
3155 ! calculations (outputs to LESL4)
3365 ! Setting of first-dimension array boundary for routine fesft
3372 CALL fesft
3387 CALL fesft
3403 ! Store back results from fesft
3571 ! of clouds have been calculated in fesft, therefore set missing value:
3595 ! Section 8: Calculation of radiation fluxes in routine fesft
3599 CALL fesft
3614 CALL fesft
4348 SUBROUTINE fesft(
4367 ! The module procedure fesft organizes the radiative transfer calculations.
4290 ! decision is taken whether the so-called FSW or FSWF approach
```