

! Driver structure  
! -----  
! 1. Initializations  
! 2. Temporal loops  
! 2.a Read forcing  
! 2.b Interpolate forcing in time  
! 2.c Run surface  
! 2.d Write prognostics and diagnostics variables

# offline.F90

in src/OFFLIN

0 - Local variable declaration...

1 - Initialization...

2 - Temporal loops

3 - Write restart files...

4 - Inquiry mode...

5 - Close parallelized...

- Read Forcing (with OL\_READ\_ATM)
- Interpolations...
- Run Surface COUPLING\_SURF\_ATM\_n
- Send to other models...
- Write files and co...

\*COUPLING\_INLAND\_WATER\_n\*  
- Driver to call the schemes for the four surface types (SEA, WATER, NATURE, TOWN)

# coupling\_surf\_atmn.F90

in src/SURFEX

## COUPLING\_SURF\_ATM\_n

- IF (LHOOK) CALL DR\_HOOK
- Time evolution: CALL ADD\_FORECAST\_TO\_DATE\_SURF
- Sea, Inland water, Natural surface, Urban tile calculation: CALL TREAT\_SURF **M**
- Grid box average: CALL AVERAGE\_FLUX
- Chemical emission: CALL CH\_EMISSION\_...
- Radiative flux: CALL AVERAGE\_RAD
- Physical properties: CALL AVERAGE\_PHY
- Orographic friction: CALL SSO\_...
- Inline diagnostic: CALL DIAG\_INLINE\_SURF\_ATM\_n
- IF (LHOOK) CALL DR\_HOOK

## TREAT\_SURF

- IF (LHOOK) CALL DR\_HOOK
- CALL COUPLING\_SEA\_n
- CALL COUPLING\_INLAND\_WATER\_n
- CALL COUPLING\_NATURE\_n **C**   
Chooses the surface schemes for natural continental parts
- CALL COUPLING\_TOWN\_n
- IF (LHOOK) CALL DR\_HOOK
- IF (LHOOK) CALL DR\_HOOK
- IF ('ISBA') CALL COUPLING\_ISBA\_SVAT\_n **C**
- ELIF ('TSZ0') CALL COUPLING\_TSZ0\_n
- ELIF ('FLUX') CALL COUPLING\_IDEAL\_FLUX
- ELIF ('NONE') = 0
- IF (LHOOK) CALL DR\_HOOK

\*COUPLING\_ISBA\_SVAT\_n\* - Chooses the time method (explicit, implicit, time-splitting) for ISBA scheme


## coupling\_isba\_svatn.F90

1. Time-steps number

2. Outputs initialization

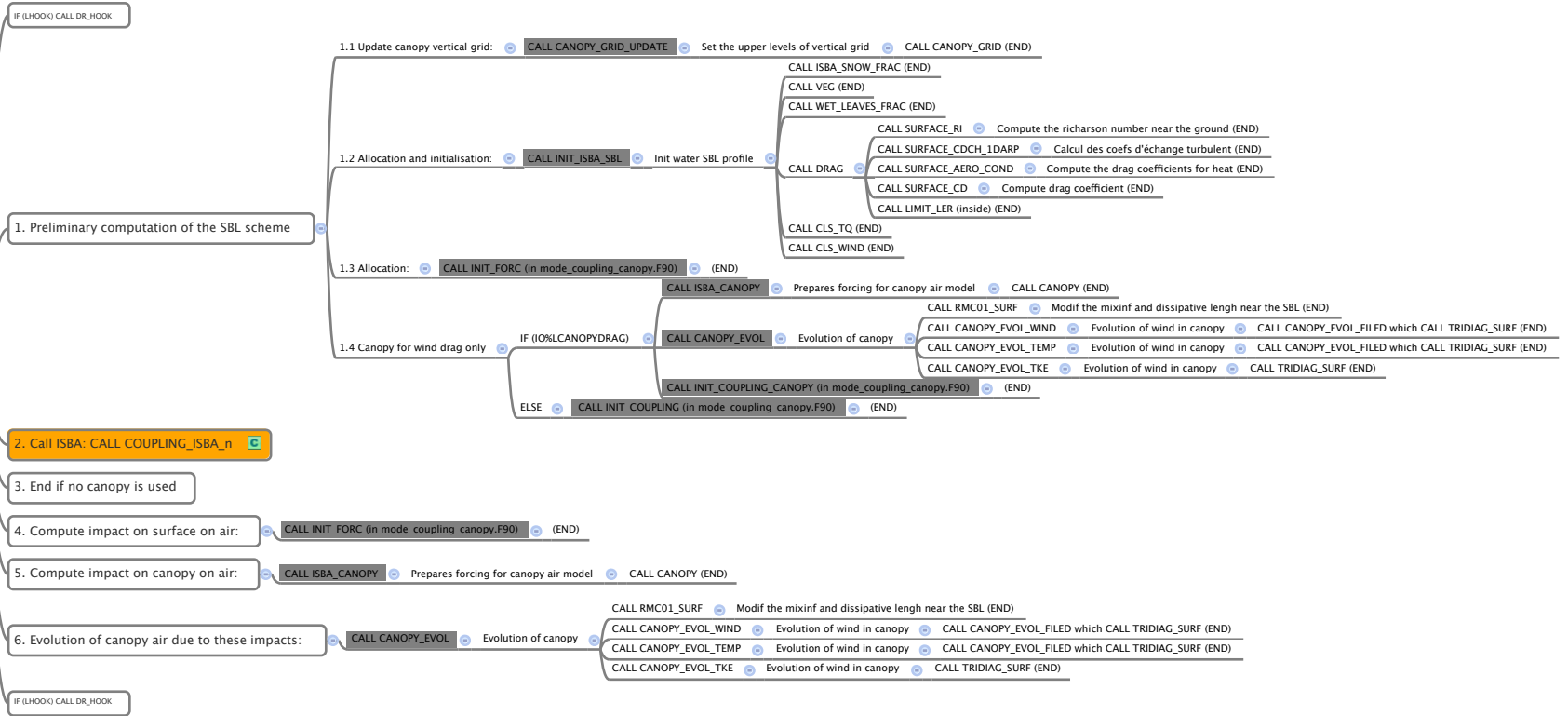
3. Loop on surface times-steps:  
CALL COUPLING\_ISBA\_OROGRAPHY\_n

Parameterizes effects of subgrid orography on radiative and energy fluxes

1. Orographie, atm to surface via CALL FORCING\_VERT\_SHIFT
2. Orographie slope
3. Call of ISBA: CALL COUPLING\_ISBA\_CANOPY 
4. If, modif turbulent energy and gaz flux

# coupling\_isba\_canopyn.F90

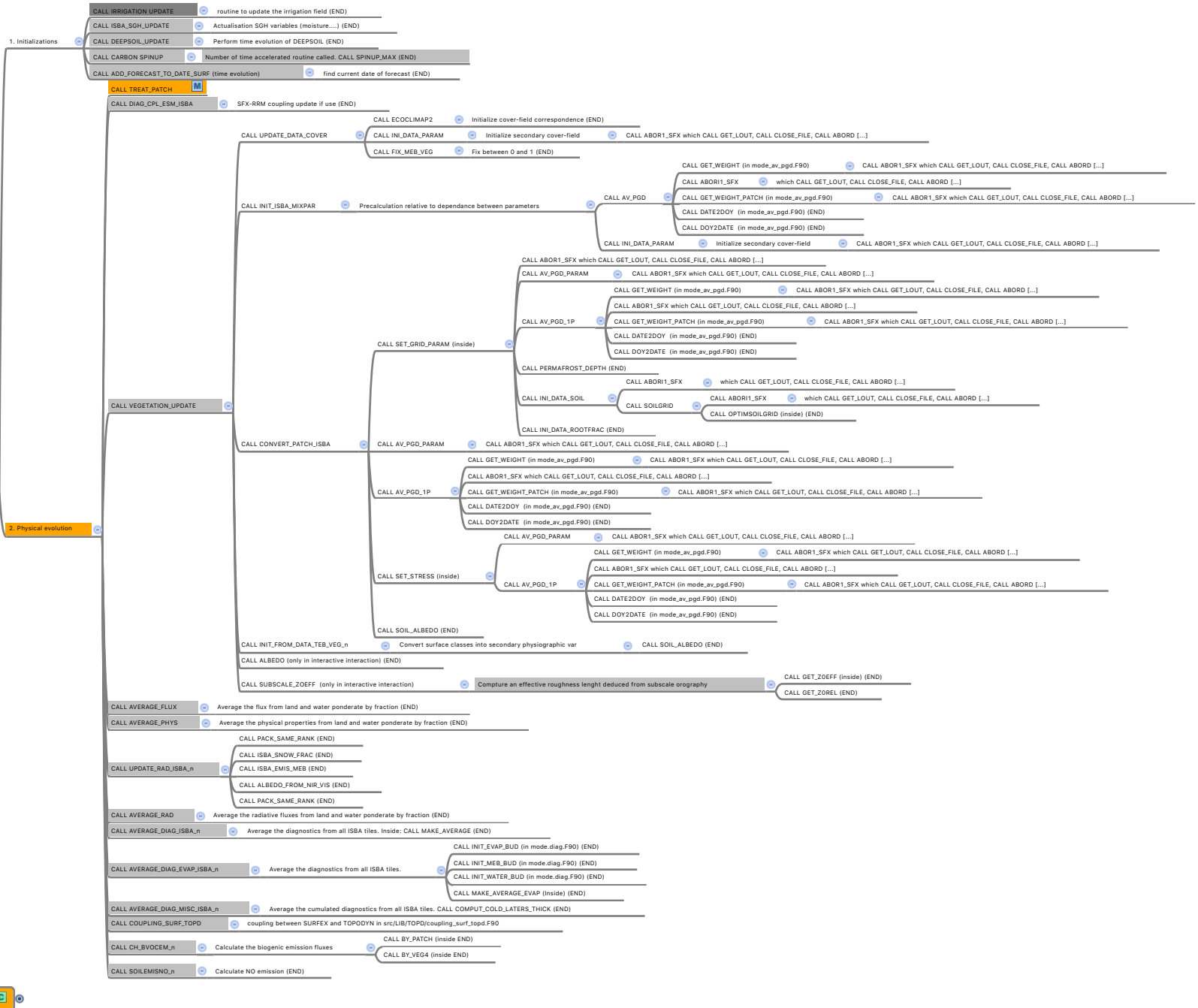
\*COUPLING\_ISBA\_CANOPY\_n\* - Adds a SBL to ISBA



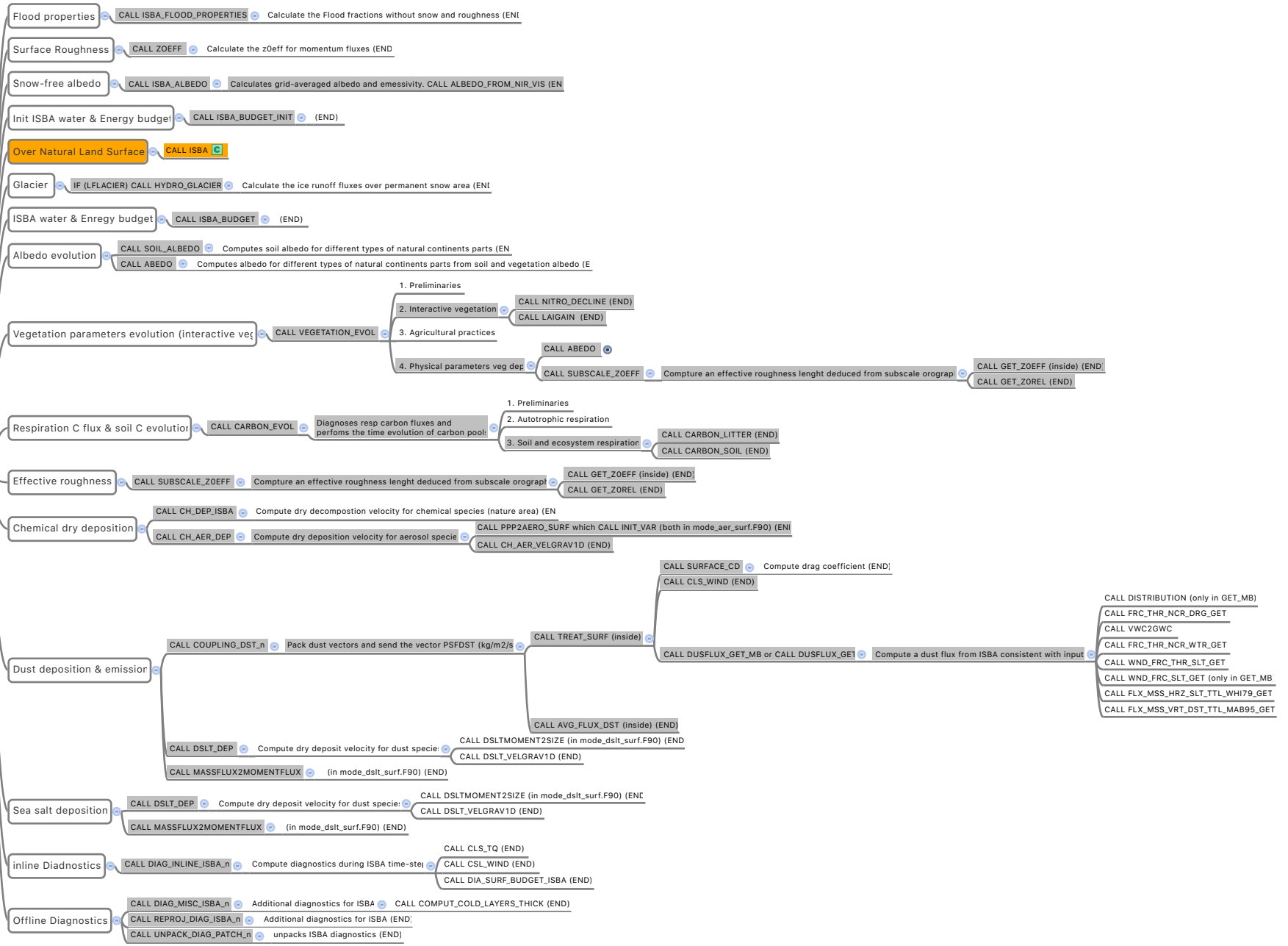
\*COUPLING\_ISBA\_n \* -Driver for ISBA time steps

**coupling\_isban.F90**

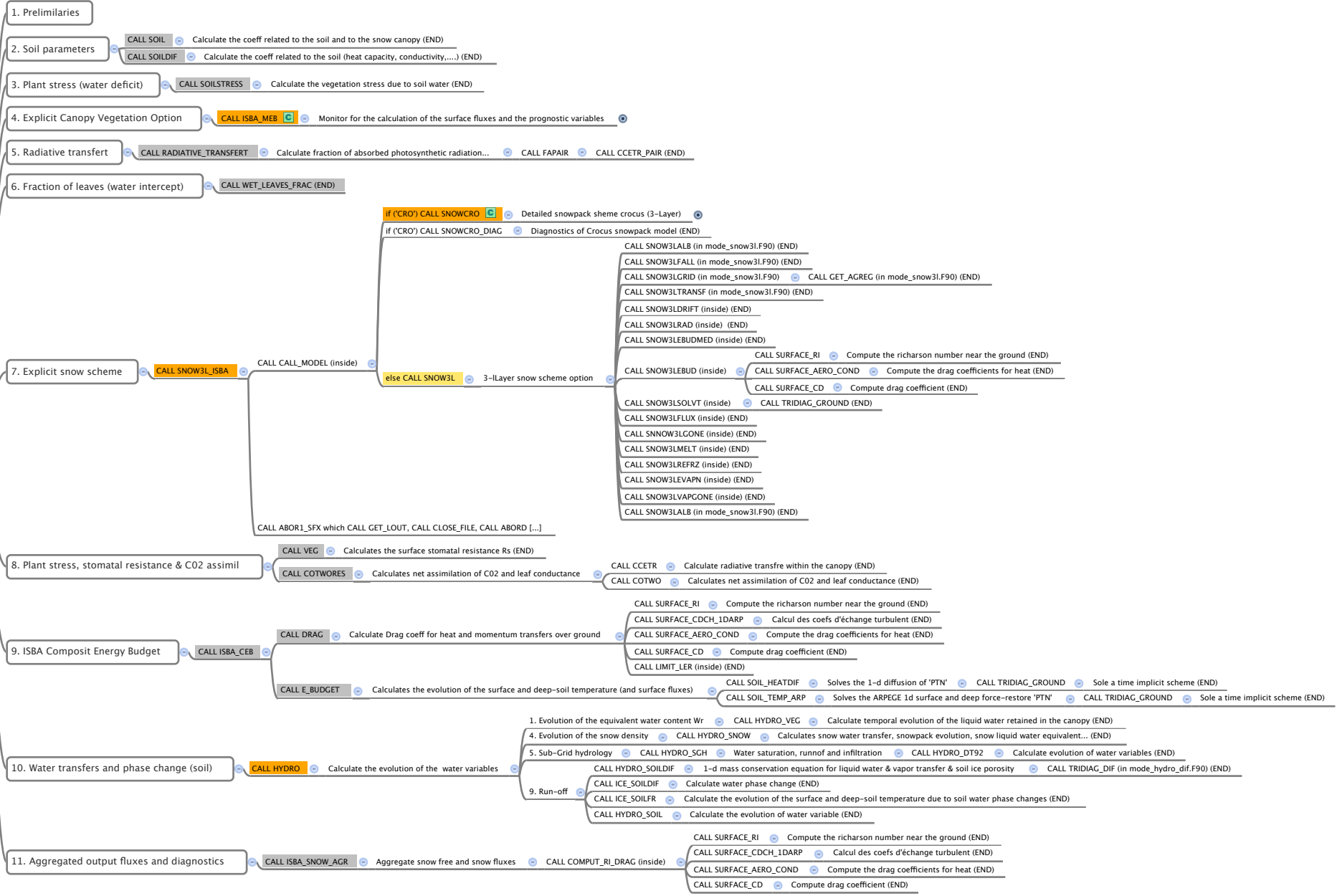
**COUPLING\_ISBA\_r**



**TREAT\_PATCH**  
in coupling\_isban.F90

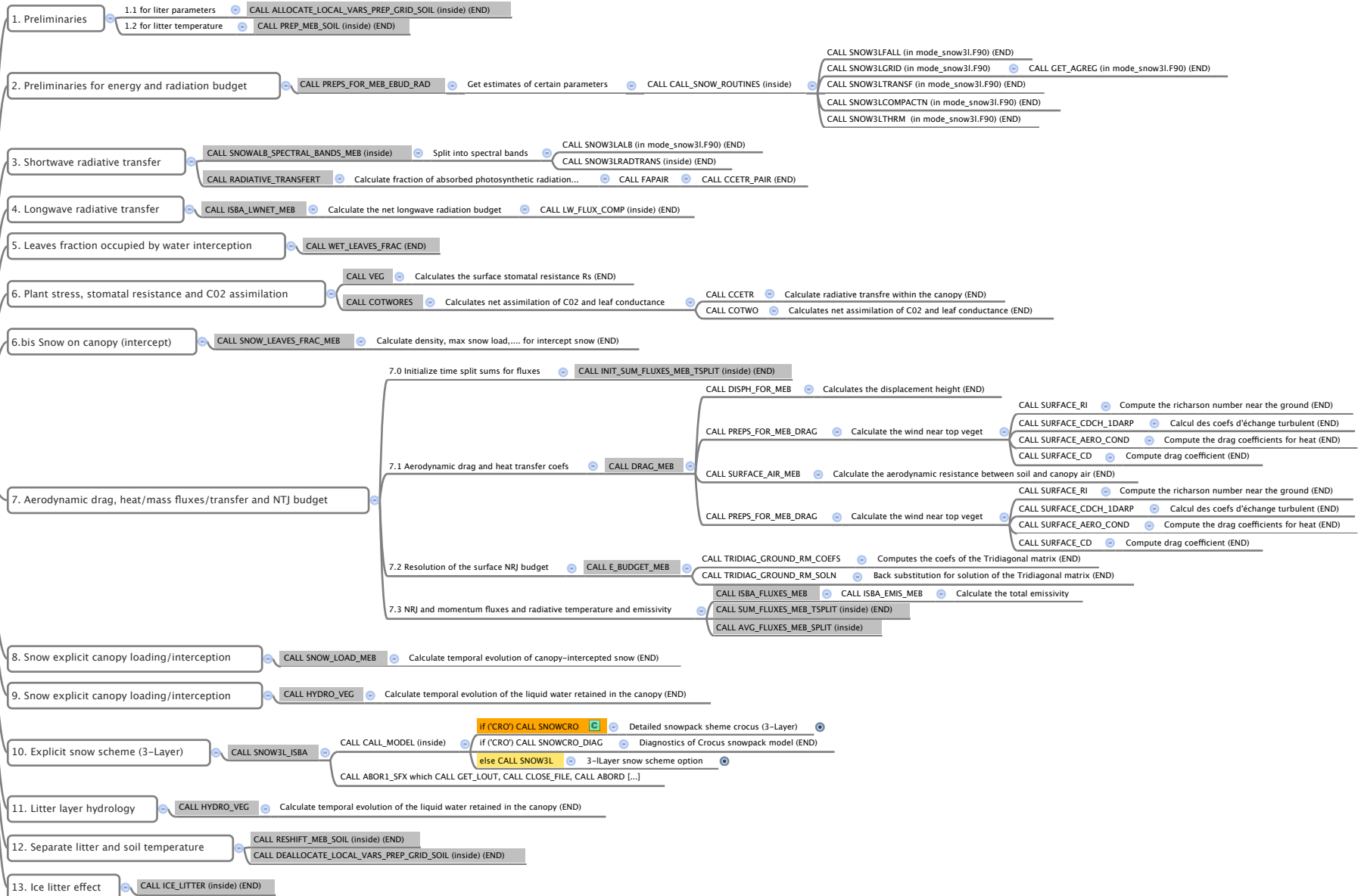


isba.F90



Monitor for the calculation of the surface fluxes and the prognostic variables

isba\_meb.F90





# snowcro.F90

Detailed snowpack scheme crocus (3-Layer)

