# SCHISM模型中的NETCDF\_SINGLE\_OUTPUT

NETCDF\_SINGLE\_OUTPUT函数作用：在SCHISM模型中，并行计算时间迭代步中，自动合并为一个文件，输出为nc格式。

输出结果：outputs/schism\_history.nc

## 结构：

schism\_steps.f90:

do it=1,nsteps

call NETCDF\_SINGLE\_OUTPUT(it)

enddo

SUBROUTINE NETCDF\_SINGLE\_OUTPUT(it)

IMPLICIT NONE

integer, intent(in) :: it

recs\_his = recs\_his + 1

Print \*, ' recs\_his=', recs\_his

CALL WRITE\_SINGLE\_OUTPUT\_DATA(it)

END SUBROUTINE

SUBROUTINE WRITE\_SINGLE\_OUTPUT\_DATA(it)

iret=nf90\_open(TRIM(FILE\_NAME), nf90\_write, ncid)

CALL GENERIC\_NETCDF\_ERROR\_SCHISM(CallFct, 1, iret)

eTimeDay = eTimeStart + it \* (dt/86400.)

CALL WRITE\_NETCDF\_TIME\_SCHISM(ncid, recs\_his, eTimeDay)

! 一维整数型数组输出

CALL WRITE\_1DVAR\_SINGLE\_INT(ncid, "kbp00", kbp00)

! 一维浮点数数组输出

CALL WRITE\_1DVAR\_SINGLE(ncid, "eta2", eta2)

! 标量输出

CALL WRITE\_NVRT\_KBP\_SINGLE(ncid, "qnon", qnon)

！目前，还没有其他标量（泥沙，水质）的整体nc文件输出

! 考虑数据量很大时，单个文件输出速度很慢！

END

SUBROUTINE WRITE\_1DVAR\_SINGLE(ncid, string, VARin)

CALL GET\_NETCDF\_VARNAME(string, stringCF)

IF (myrank .eq. 0) THEN

allocate(VARout(np\_global), stat=istat)

DO iProc=2,nproc

call mpi\_irecv(VARout,1,netcdf\_his1\_type(iProc-1),iProc-1,8024,comm,netcdf\_his1\_rqst(iProc-1),ierr)

END DO

DO IP=1,npa

IPglob = iplg(IP)

VARout(IPglob) = VARin(IP)

END DO

iret=nf90\_inq\_varid(ncid, TRIM(stringCF), var\_id)

CALL GENERIC\_NETCDF\_ERROR\_SCHISM(CallFct, 1, iret)

IF (nproc > 1) THEN

call mpi\_waitall(nproc-1,netcdf\_his1\_rqst,netcdf\_his1\_stat,ierr)

END IF

IF (NF90\_RUNTYPE == NF90\_OUTTYPE\_HIS) THEN

iret=nf90\_put\_var(ncid,var\_id,VARout,start = (/1, recs\_his/), count = (/ np\_global, 1 /))

CALL GENERIC\_NETCDF\_ERROR\_SCHISM(CallFct, 2, iret)

ELSE

iret=nf90\_put\_var(ncid,var\_id,SNGL(VARout),start = (/1, recs\_his/), count = (/ np\_global, 1 /))

CALL GENERIC\_NETCDF\_ERROR\_SCHISM(CallFct, 3, iret)

ENDIF

deallocate(VARout)

ELSE ! mrank /= 0

CALL MPI\_SEND(VARin, npa, rtype, 0, 8024, comm, ierr)

END IF

END