

driver flag values description

The global analysis script `divadoall` will use the information in file `driver` to take the desired actions. In the `driver` file, each flag value is associated to an action, for the control of the execution edit `driver` to prescribe flag values.

```

extract flag: 0 no, 1 do it, -1 press coord, -10 pressure+Saunders
1
boundary lines and coastlines: 0 nothing, 1:contours, 2:UV, 3:1+2
1
cleaning data: 1, 2: RL, 3: both, 4: 1+outliers elimination, 5:4+2
4
minimal number of data in a layer. If less, uses data from any month
10
Optimise parameters: 0, 1, 2, 3, -1, -2, -3, 10, -10, 30 and -30
-30
Minimal L
0.5
Maximal L
4
Minimal SN
0.05
Maximal SN
0.5
Analysis: possible values: 0, 1, 2, 10 to 14, 20 to 24 and +100
1
lowerlevel number
1
upperlevel number
25
Metadata xml files generation: 0, 1, 2, 10, 11, 12
1
isplot 0 or 1
1
Detreind: 0 if no detrending, number of groups if detrending.
0

```

Example file 0.0.1: driver file content.

Actions and related flag values:

- **Data extraction:** Possible flag values: 0,1,-1 and -10. If you activate the data extraction (flag value \neq 0) in the `driver` file, the execution of `divadoall` will run the `divaselectorODV4` automatically, including interpolation to the levels specified in `contour.depth`. Data will be extracted from the ODV spreadsheet file(s) specified in `datasource`. `divaselectorODV4` will recognise if the data export to ODV file was done with depths in “meters” or it was

done with pressure (in dbar) vertical coordinate, you can either choose to map it as if they were meters or apply the Saunders correction. Choose flag = -1 to use pressure coordinate and assume they are meters, and flag value = -10 to use pressure coordinates and transform to meters by using the Saunders approach.

If there is a `qflist` file, the selection with `divaselectorODV4` will only use those measurements for which the quality flag is one of those found in the file `qflist`. In the absence of `qflist`, no quality flag analysis is done and all data taken.

Note: you can specify several ODV spreadsheet files as input files, one name per line, in `datasource`, *provided they have the same naming, depth and quality conventions*.

- **Boundary lines and coastlines generation:** Possible flag values are 0, 1, 2 and 3. When this action is activated (flag ≥ 1), you must provide in the input directory the files `TopoInfo.dat` and `topo.grd` in addition to `contour.depth` file.
 - * = 1 if contour files are to be generated,
 - * = 2 if advection constraint (Anisotropic correlation along topography) files are to be generated from `topo.grd`,
 - * = 3 if contour files and advection constraint are to be generated.
- **Cleaning data and Relative Length:** Possible flag values are 0, 1, 2, 3, 4 and 5:
 - * = 1 if data files are to be cleaned,
 - * = 2 if relative length files are to be generated,
 - * = 3 if data files are to be cleaned and relative length files are to be generated.
 - * = 4 if outliers are to be cleaned from data files.
 - * = 5 if outliers are to be cleaned from data files and, relative length files to be generated.
- **Parameter optimization:** Possible flag values are 0, 1, 2, 3, -1, -2, -3, 10, -10, 30 and -30:
 - * = 1 if correlation length parameters are to be estimated,
 - * = 2 if signal to noise ratio (S/N) parameters are to be estimated,
 - * = -1 if correlation length parameters are to be estimated and vertically filtered,
 - * = -2 if signal to noise ratio (S/N) parameters are to be estimated and vertically filtered,
 - * = 3 if both correlation length and signal to noise ratio parameters are to be estimated,
 - * = -3 if both correlation length and signal to noise ratio parameters are to be estimated and vertically filtered,
 - * = 10 if correlation length parameters are to be estimated using data mean distance as a minimum,

- * = -10 if correlation length parameters are to be estimated using data mean distance as a minimum and vertically filtered,
 - * = 30 if both correlation length and signal to noise ratio parameters are to be estimated using data mean distance as a minimum (for *CL*),
 - * = -30 if both correlation length and signal to noise ratio parameters are to be estimated using data mean distance as a minimum (for *CL*), and both parameters vertically filtered.
- **Analysis:** analysis and reference fields can be performed in different ways:
 - **Perform analysis:** Possible flag values are 1, 10, 11, 12, 13 and 14:
 - * = 1 if analysis fields of the given variable are to be performed for all the layers between L_1 and L_2 which are the flag values for *lowerlevel number* and *upperlevel number* in the `driver`.
 - * = 10 if analysis fields of the given variable are to be performed with `exp(data)-log(analysis)` transformation
 - * = 11 if analysis fields of the given variable are to be performed with `log(analysis)-exp(data)` transformation
 - * = 12 if analysis fields of the given variable are to be performed with `(data)2-√(analysis)` function transformation
 - * = 13 if analysis fields of the given variable are to be performed with anamorphose transformation
 - * = 14 if analysis fields of the given variable are to be performed with user chosen transformation
 - **Perform reference fields:** Possible flag values are 2, 20, 21, 22, 23 and 24:
 - * = 2 if semi normed reference fields of the given variables (prescribed in `varlist` and for time periods described in `yearlist` and `monthlist`) are to be performed for all the layers between L_1 and L_2 , which are the flag values for *lowerlevel number* and *upperlevel number* in the `driver`.
 - * = 20 if analysis fields of the given variable are to be performed with `exp(data)-log(analysis)` transformation
 - * = 21 if analysis fields of the given variable are to be performed with `log(analysis)-exp(data)` transformation
 - * = 22 if analysis fields of the given variable are to be performed with `(data)2-√(analysis)` function transformation
 - * = 23 if reference fields of the given variable are to be performed with anamorphose transformation
 - * = 24 if reference fields of the given variable are to be performed with user chosen transformation
 - **Adding 100 to the flag value:**
 - * = 101 or = $11x$ allows performing analysis using reference fields for each layer using all data from the two neighbouring layers in addition to the layer data set. Only reference fields are performed
 - * = 102 or = $12x$ allows performing reference fields for each layer using all data from the two neighbouring layers in addition to the layer data set.

- **Metadata xml and NetCdf files:** Possible flag values are 0, 1, 2, 10, 11 and 12:
 - * = 0 For each variable in `varlist` and each period in `yearlist` a NetCdf file is generated containing climatologies for all months in `monthlist`.
 - * = 1:
 - For each variable in `varlist` and each period in `yearlist` a NetCdf file is generated containing climatologies for all months in `monthlist`.
 - Metadata Xml file is generated for each variable in `varlist` for **Sea-DataNet** CAMIOON catalogue.
 - * = 2:
 - For each variable in `varlist` and each period in `yearlist` a NetCdf file is generated containing climatologies for all months in `monthlist`.
 - Metadata Xml file is generated for each variable in `varlist` for **EMODNET** CAMIOON catalogue.
 - * = 10 For each variable in `varlist` a NetCdf file is generated containing climatologies and for all periods in `yearlist` and all months in `monthlist`.
 - * = 11:
 - For each variable in `varlist` a NetCdf file is generated containing climatologies and for all periods in `yearlist` and all months in `monthlist`.
 - Metadata Xml file is generated for each variable in `varlist` for **Sea-DataNet** CAMIOON catalogue.
 - * = 12:
 - For each variable in `varlist` a NetCdf file is generated containing climatologies and for all periods in `yearlist` and all months in `monthlist`.
 - Metadata Xml file is generated for each variable in `varlist` for **EMODNET** CAMIOON catalogue.
- **Gnuplot plots:** Possible flag values are 0 and 1. Activate this action for a quick visualization (and assessment) of the climatology production, `gnuplot` executions can be included in the production process.
- **Detrending** Possible flag values are 0 and n : the action is activated when choosing flag value an integer $n > 0$. The chosen value n must be equal or smaller to groups number in data files.