MADE-IN namelist

For the simulations included in this work, we used the following setting in the namelist of MADE-IN:

- Control
  `lmade = .true.`: call MADE
  `lbctime = .true.`: enable diagnostic on BC and dust aging time

- Coupling with radiation
  `l_aerorad = .true.`: calculate aerosol optical properties
  `rad_sw_filename = '`<filename>': lookup table for shortwave radiation
  `rad_lw_filename = '`<filename>': lookup table for longwave radiation
  `rad_diag_wavelen = 0.550`: wavelenght [μm] for optional diagnostic output

- Coupling with clouds
  `l_cloudphysics = .true.`: calculate cloud droplet number concentration
  `act_scheme = 1`: activation scheme. 1 = Abdul-Razzak and Ghan (2000); 2= Lin and Leaitch (1997)

- Coupling with chemistry
  `lcpl_gasphase= .true.`: coupling with gas phase chemistry
  `chemmodule = 'mecca'`: name of chemistry module
  Define gas phase tracer used from chemistry module as 'tracername', 'subname'
  `H2SO4_gas = 'H2SO4', ''`
  `HNO3_gas = 'HNO3', ''`

- Offline emissions
  `SOA_stream = 'offlem'`: name of stream for SOA emissions
  `SOA_element= 'RGT0099_soa_emiss'`: stream element of SOA emissions

- Online emissions
  `l_calc_emis = .true.`: switch for online emissions
  `l_ss = .true.`: calculate online sea salt emission
  `SSemis_stream = 'onlem'`: stream name for sea salt emission
  `SS_mass_as = 'mss_as_lsce'`: stream element for sea salt mass in the accumulation mode
  `SS_num_as = 'nss_as_lsce'`: stream element for sea salt number in the accumulation mode
  `SS_mass_cs = 'mss_cs_lsce'`: stream element for sea salt mass in the

coarse mode
`SS_num_cs = 'nss_cs_lsce'`: stream element for sea salt number in the coarse mode
`l_dust = .false.`: calculate online dust emissions

References

Abdul-Razzak, H. and Ghan, S.: A parameterization of aerosol activation. 2. Multiple aerosol types, J. Geophys. Res., 105(D5), 6837–6844, 2000.

Lin, H. and Leaitch, W. R.: Development of an in-cloud aerosol activation parameterization for climate modelling, in: Proc. WMO Workshop on Measurement of Cloud Properties for Forecasts of Weather, Air Quality and Climate, pp. 328–355, World Meteorology Organization, Geneva, Switzerland, 1997.