| | Errors | Limitations | Diagnostics Affected | If participating in CMIP6/CFMIP3? |
|---|---|---|---|---|
| v1.4.0 | Error in treatment of mixed-phase clouds in MODIS simulator. | Unable to produce diagnostics in CFMIP3 data request:<br>*Optical_Thickness_vs_ReffICE\**<br>*Optical_Thickness_vs_ReffLIQ\** | *MODIS simulator (field within type cosp_modis):*<br>*Cloud_Fraction_Total_Mean*<br>*Cloud_Fraction_Water_Mean*<br>*Cloud_Fraction_Ice_Mean*<br>*Cloud_Fraction_High_Mean*<br>*Cloud_Fraction_Mid_Mean*<br>*Cloud_Fraction_Low_Mean*<br>*Optical_Thickness_Total_Mean*<br>*Optical_Thickness_Water_Mean*<br>*Optical_Thickness_Ice_Mean*<br>*Optical_Thickness_Total_LogMean*<br>*Optical_Thickness_Water_LogMean*<br>*Optical_Thickness_Ice_LogMean*<br>*Cloud_Particle_Size_Water_Mean*<br>*Cloud_Particle_Size_Ice_Mean*<br>*Cloud_Top_Pressure_Total_Mean*<br>*Liquid_Water_Path_Mean*<br>*Ice_Water_Path_Mean*<br>*Optical_Thickness_vs_Cloud_Top_Pressure\**<br>*NOTE: Most impacts are expected to affect only column fields in which mixed-phase clouds are visible from the top of the atmosphere.* | **Option 1:** Submit to CMIP6/CFMIP3 with affected diagnostics omitted.<br><br>**Option 2:** Update to COSPv1.4.2<br>The following patch (~500 lines of code) can be applied directly to your COSPv1.4 source code to update it to v1.4.2. https://github.com/CFMIP/COSPv1/blob/beta_v1.4.2/patch.v1.4.0_to_v1.4.2.tar<br><br>Highlighted changes can be seen here:<br>For v1.4.0 -> v1.4.1: https://github.com/CFMIP/COSPv1/commit/88a3582f5beb7cbcf0acd39bcb4d7be1833d83ee<br>For v1.4.1 -> v1.4.2: https://github.com/CFMIP/COSPv1/commit/d52a21240883b29fb309e9ddb77e4f661dc047d2 |
| v1.4.1 | • Error in treatment of mixed-phase clouds in MODIS simulator.<br><br>• There are 2 issues with the new MODIS diagnostics: 1) reported as fractional values, should be in percent and 2) require initialization. | | *MODIS simulator (fields within type cosp_modis):*<br>*Cloud_Fraction_Total_Mean*<br>*Cloud_Fraction_Water_Mean*<br>*Cloud_Fraction_Ice_Mean*<br>*Cloud_Fraction_High_Mean*<br>*Cloud_Fraction_Mid_Mean*<br>*Cloud_Fraction_Low_Mean*<br>*Optical_Thickness_Total_Mean*<br>*Optical_Thickness_Water_Mean*<br>*Optical_Thickness_Ice_Mean*<br>*Optical_Thickness_Total_LogMean*<br>*Optical_Thickness_Water_LogMean*<br>*Optical_Thickness_Ice_LogMean*<br>*Cloud_Particle_Size_Water_Mean*<br>*Cloud_Particle_Size_Ice_Mean*<br>*Cloud_Top_Pressure_Total_Mean*<br>*Liquid_Water_Path_Mean*<br>*Ice_Water_Path_Mean*<br>*Optical_Thickness_vs_Cloud_Top_Pressure\**<br>***Optical_Thickness_vs_ReffICE\****<br>***Optical_Thickness_vs_ReffLIQ\**** | **Option 1:** Submit to CMIP6/CFMIP3 with affected diagnostics omitted.<br><br>**Option 2:** Update to COSPv1.4.2<br>The following patch (18 lines of code) can be applied directly to your COSPv1.4.1 source code to update it to v1.4.2. https://github.com/CFMIP/COSPv1/blob/beta_v1.4.2/patch.v1.4.1_to_v1.4.2.tar<br><br>Highlighted changes can be seen here: https://github.com/CFMIP/COSPv1/commit/d52a21240883b29fb309e9ddb77e4f661dc047d2 |

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|---|---|---|---|---|
| *v1.4.2* | None known | | | No action needed |
| | | | | |
| *v2.0.0* | Error in treatment of mixed-phase clouds in MODIS simulator. | | *MODIS simulator (fields within type cosp_outputs):*<br>    *Cloud_Fraction_Total_Mean*<br>    *Cloud_Fraction_Water_Mean*<br>    *Cloud_Fraction_Ice_Mean*<br>    *Cloud_Fraction_High_Mean*<br>    *Cloud_Fraction_Mid_Mean*<br>    *Cloud_Fraction_Low_Mean*<br>    *Optical_Thickness_Total_Mean*<br>    *Optical_Thickness_Water_Mean*<br>    *Optical_Thickness_Ice_Mean*<br>    *Optical_Thickness_Total_LogMean*<br>    *Optical_Thickness_Water_LogMean*<br>    *Optical_Thickness_Ice_LogMean*<br>    *Cloud_Particle_Size_Water_Mean*<br>    *Cloud_Particle_Size_Ice_Mean*<br>    *Cloud_Top_Pressure_Total_Mean*<br>    *Liquid_Water_Path_Mean*<br>    *Ice_Water_Path_Mean*<br>    *Optical_Thickness_vs_Cloud_Top_Pressure\**<br>    ***Optical_Thickness_vs_ReffICE\****<br>    ***Optical_Thickness_vs_ReffLIQ\**** | **Option 1:** Submit to CMIP6/CFMIP3 with affected diagnostics omitted.<br><br>**Option 2:** Update to COSPv2.0.1.<br>This can be done by updating your local COSP repository with the master (e.g. git pull origin master). This change only impacts a few lines of code.<br><br>Highlighted changes can be seen here:<br>https://github.com/CFMIP/COSPv2.0/commit/74cde20c63ad9a77f69ee329bb25cfb3bfb0ba0e |
| *v2.0.1* | | | | No action needed |

*\*Three-dimensional diagnostic, all other diagnostics are column fields and have one dimension.*