

GNU gfortran compatible version: Epics9.20

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Epics9.20 became compatible with GNU gfortran while keeping the compatibility with Intel ifort. It needs Cosmos8.00 so we assume the user is ready for using Cosmos8.00 and knows the document “GNU gfortran compatible version: Cosmos8.00” for Cosmos (Cosmos8.00.pdf).

To comply with gfortran, those required for Cosmos8.00 are also needed. While briefly summarize them, we mention mainly Epics specific points.

The main difference from older versions is in how to describe the structure construct. Epics9.20 has already been modified and the user need not worry about that. If the user has an old own application program, it must be updated. This is possible as in the Cosmos case; i.e, by using the script command “dot2perc.sh” in Cosmos/Script.

- In Epics/, site.config must be selected as in Cosmos case.
- Although not mandatory, we assume “~/Epics” is setup as the link to your desired version of Epics (e.g, Epics9.20). This is completely similar to the Cosmos case. Then,
- In ~/.bashrc, add

```
export EPICSTOP=~ /EPICS
export EPICSTOP=$EPICSTOP/epics
export PATH=...$PATH:$COSMOSTOP/Script:$EPICSTOP/Script:...|
```

The last one should replace the line for Cosmos,

```
export PATH=...$PATH:$COSMOSTOP/Script:...|
```

The position of \$PATH may be elsewhere.

The gfortran compatible version contains also next updates:

- A bug fix: If some component in a config file has explicit rotation, and a hadron primary enters and makes multi-particle production somewhere, and a produced neutral hadron passes such a rotated component and makes multi-particle production in some non-rotated component, then the event might be seen as if we had very large transverse momentum particles. For non hadron incidents, the bug is almost absent but small fraction of photo-hadron production or muon’s nuclear interaction could lead to visible effect at high energies.
- Update use of “FreeC f”. This is described elsewhere (V1y.pdf).

- Others are not directly related to Epics execution but are for utility commands. In older versions, some of them must have been issued after going to, say, Epics/Util, but now can be used from anywhere, provided that the command search path is properly set as mentioned above.

(Those use Gnuplot are not recommended; slow and not beautiful).

mkdrawconfig	Make a program for drawing a configuration. May be used if next drawconfig command cannot update the program automatically
drawconfig	Prepare for displaying a configuration.
dispcconfigbygeomv	Display config prepared by drawconfig; geomview interface.
disptracebygeomv	Display particle tracks with config optionally
dispcconfigbygntp	Display config; gnuplot interface
disptracebygntp	Display trace.

Note:

With the recent combination of Linux and Mac, Geomview window invoked on Linux seems not transmitted to Mac (i.e, when remote login is made via “ssh -Y” from Mac to Linux and Geomview command is issued). Direct workaround is not yet found.

However, “vnc” connection or “remote-desktop” connection (in some environment “vpn” connection must be established in advance) will resolve this problem.