

Operational Note 4/16/2013

Note that the Notebook 5-0Tensors under Mathematica version 8, has been split into two notebooks, 5-0Mtensors.nb and 5-0ScTensorsCartan.nb under Version 9.

To run under Mathematica Version 9, Cartan 1.8 needs a bit of adjustment. Preceding the call `<<Cartan.m`, one needs to insert the following Mathematica commands to disable the built in version of `Symmetrize[]` and make loading Cartan's version possible.

```
Unprotect[Symmetrize]
Remove[Symmetrize]
```

If these are successful Mathematica will respond with

```
{"Symmetrize"}
```

The only other major caveat is that resuming the Mathematica session without Cartan (as one could do in version 8) is not recommended.

One may also find that input files created under version 8 cannot be read under 9. That means that all routine input files will have to be manually recreated in version 9 before Cartan 1.8 will read them in properly.

To test the input file creation process we provide the example used to obtain DDMtest9 and Schwtest9, both of which can be read under Mathematica version 9. **Remember to use these**

two files (as provided in the For user home ch5 directory) they MUST be placed in the user's home directory prior to calling Cartan with `<<Cartan.m`

Direct Input of Schwarzschild Example

```
Run Clear[]
Run Unprotect[Symmetrize] and Remove[Symmetrize]
Run <<Cartan.m
Choose 1) interactive input
Choose default dimensions [4]
Enter {r,theta,phi,t}
Select 1) orthonormal=default
Select {1,1,1,-1}=default
Select -1=default
Choose tetrad 1)diagonal
Type in the metric components
(1 r)  $E^{\lambda[r]}$ 
(2 theta) r
(3 phi)  $r \sin[\theta]$ 
```

(4 t) $E^{\mu[r]}$
Torsion ? N=default