
Definitions

```
In[1]:= filterTimes[timer[name_, val_, children_], thresh_] :=
  Module[{isOK, f},
    isOK[timer[n_, v_, ch_]] :=
      v > thresh;
    f[t_] := filterTimes[t, thresh];
    timer[name, val, f /@ Select[children, isOK]]]

In[2]:= addRest[tim : timer[n_, t_, c_] :=
  Module[{cTot, rest},
    If[Length[c] == 0, Return[tim]];
    cTot = Plus @@ Map[time, c];
    rest = t - cTot;
    timer[n, t, Append[addRest /@ c, timer["rest", rest, {}]]];]

In[3]:= time[timer[n_, t_, c_]] := t

In[4]:= prune[t : timer[n_, v_, c_], lev_] :=
  timer[n, v, If[lev == 0, {}, Map[prune[#, lev - 1] &, c]]]

In[5]:= norm[timer[n_, v_, c_], tot_] :=
  timer[n, 100 v / tot, Map[norm[#, tot] &, c]]

In[6]:= norm[t : timer[n_, v_, c_] :=
  norm[t, v]
```

Load timers

```
In[7]:= timersXML = Import["~/timers.0.xml"];

In[8]:= timers1 = timersXML //. {XMLElement[x_, attrs_, {t_, children___}] :>
  timer["name" /. attrs, ToExpression[t], {children}],
  XMLObject[_][_, d_, _] => d];

In[9]:= timers2 = First@Cases[{timers1}, timer["Evolve", v_, c_], Infinity];

In[28]:= timers3 = norm[timers2];

In[29]:= timers4 = filterTimes[timers3, 1];

In[30]:= timers5 = addRest[timers4];

In[31]:= timers6 = filterTimes[timers5, 1];

In[32]:= timers = timers6;
```

Other

Tree Display

```
In[15]:= treeView[t : timer[n_, v_, c_] :=
  Module[{node},
    If[c == {},
      Row[{" ", v, "% ", n}],
      OpenerView[{Row[{v, "% ", n}],
        Column[treeView /@ c]}, True]]]
```

```
In[33]:= treeView[timers]
```

```
Out[33]= ▼ 100.% Evolve
```

```

▼ 8.378% Evolve::CallAnalysis
  ▼ 5.13399% Evolve::CallAnalysis::CCTK_POSTRESTRICT
    ▼ 5.13399% CallFunction
      ▼ 4.8378% CallFunction::syncs
        3.93512% Evolve::Prolongate
      ▼ 2.53879% Evolve::CallAnalysis::CCTK_POSTSTEP
        ▼ 2.53879% CallFunction
          ▼ 1.2835% CallFunction::syncs
            1.2835% Evolve::Sync
            1.18477% CallFunction::thorns
        ▼ 85.543% Evolve::CallEvol
          ▼ 84.8237% Evolve::CallEvol::CCTK_EVOL
            ▼ 84.8237% CallFunction
              ▼ 17.9549% CallFunction::syncs
                7.48942% Evolve::Prolongate
                10.4513% Evolve::Sync
              ▼ 66.3611% CallFunction::thorns
                3.59661% CallFunction/BoundaryConditions::Interpolate2ApplyBC
                40.6488% CallFunction/CTG_CalcRHS::CTGEvolution_CalcRHS_detg
                4.99295% CallFunction/CTG_CalcRHS::ShiftGammaDriver
                2.67983% CallFunction/CTG_Convert_to_ADM::CTGBase_Convert_CTG_to_ADM_detg
                5.24683% CallFunction/MoL_PostRHS::GlobalDeriv_Dissipation
                4.54161% CallFunction/MoL_Step::MoL_Add
                1.24118% CallFunction/MoL_Step::MoL_InitRHS
                3.41326% rest
            ▼ 1.14245% Evolve::CallRegrid
              ▼ 1.11425% Carpet::Regrid
                ▼ 1.07193% Carpet::RegridMap
                  ▼ 1.07193% CarpetLib::gh::regrid
                    1.04372% CarpetLib::dh::regrid
              4.86601% Evolve::CallRestrict

```

```
In[17]:= pos[th_] :=
  If[th ≥ 7 Pi / 4 || th < Pi / 4, {-1, 0},
  If[th < 3 Pi / 4, {0, -1},
  If[th < 5 Pi / 4, {1, 0},
  If[th < 7 Pi / 4, {0, 1}]]]]
```

```
In[34]:= remQual[name_] := StringReplace[name, ___ ~~ ":" ~ x__ => x]
```

```

In[35]:= pieView[time[n_, v_, c_], th_, r_, idx_] :=
Module[
  {angles, d = 0.01, lineInner, lineOuter, indices, ph = RandomReal[{th, th + 2 Pi v / 100}],
   ph2, r1 = 1.2, colRef = ColorData[1][colIdx++] , col},
  col = If[Length[c] === 0, colRef, Lighter@Lighter@colRef];
  {col, EdgeForm[Directive[Black]], Tooltip[Disk[{0, 0}, r, {th, th + 2 Pi v / 100}], n],
   ph2 = ph;

  If[Length[c] === 0,
   Rotate[Style[Text[remQual@n, {0.1, 0}], {-1, 0}], White], th + 2 Pi v / 100 / 2, {0, 0}],
   {Style[Text[remQual@n, r1 {Cos[ph2], Sin[ph2]}, pos[ph2]], Black, Background -> col],
    lineInner = (r - 0.05) {Cos[ph], Sin[ph]};
    lineOuter = (r1 - 0.05) {Cos[ph2], Sin[ph2]};
    Style[Line[{lineInner, lineOuter}], Directive[Thick]],
    Disk[lineInner, 0.01]}}],
  angles = Table[th + Sum[2 Pi / 100 time[c[[j]]], {j, 1, i}], {i, 0, Length[c] - 1};
  indices = Table[i, {i, 1, Length[c]};
  MapThread[pieView[#1, #2, r - 0.1, idx + 1] &, {c, angles}]]]

```

```
In[36]:= colIdx = 0; Graphics[pieView[prune[timers, 20], 0, 1, 1], ImageSize -> 700]
```

