

```

<< c:\femm42\mathfemm\mathfemm.m

OpenFEMM [1]

OpenDocument [NotebookDirectory [] <> "TorqueBenchmark.fem"]

MISaveAs [NotebookDirectory [] <> "temp.fem"]

Torque = {};
dtta = 1;
n = Round [360 / dtta];
For [k = 0, k ≤ n, k++,
  tta = dtta * k;
  MIModifyBoundProp ["AGE", 10, tta];
  MIModifyBoundProp ["AGE", 11, 0];
  MIAnalyze [1];
  MILoadSolution [];
  tq = MOGapIntegral ["AGE", 0];
  Torque = Append [Torque, {tta, tq}];
  MOClose [];
  If [Mod [k, 10] == 0, Print [Last [Torque]]];
];
DeleteFile [NotebookDirectory [] <> "temp.fem"];
DeleteFile [NotebookDirectory [] <> "temp.ans"];

```

```

{0, 7.75129 × 10-7}
{10, 0.173658}
{20, 0.342031}
{30, 0.500019}
{40, 0.642813}
{50, 0.76607}
{60, 0.866058}
{70, 0.93973}
{80, 0.984849}
{90, 1.00004}
{100, 0.984843}
{110, 0.939725}
{120, 0.866057}
{130, 0.766072}
{140, 0.642814}
{150, 0.500019}
{160, 0.342031}
{170, 0.17366}
{180, 1.11969 × 10-6}

```

```
{190, -0.173659}  
{200, -0.342029}  
{210, -0.50002}  
{220, -0.642817}  
{230, -0.766072}  
{240, -0.866058}  
{250, -0.939729}  
{260, -0.984841}  
{270, -1.00004}  
{280, -0.984846}  
{290, -0.939734}  
{300, -0.86606}  
{310, -0.766071}  
{320, -0.642815}  
{330, -0.500019}  
{340, -0.342029}  
{350, -0.173656}  
{360, 7.75129 × 10-7}
```

```
CloseFEMM[]
```

```
ListPlot[Torque, Joined → True,  
BaseStyle → {FontFamily → "Arial", FontSize → 14}, ImageSize → 500, Frame → True,  
GridLines → Automatic, FrameLabel → {"Angle, Degrees", "Torque, N*m"}]
```

