

D. MTO DRC Dataset: Time Series

Summary

Fatalities: [Data](#) and [Trellis](#)

Upward trend in 2AMSunWedSober and **downward** in 1AMSatThuDrunk. Data are small counts, mostly 0 some 1's 2's 3's and 4's.

Major Injury: [Data](#) and [Trellis](#)

Downward trends: 12AMSunWed.drunk.ts, 1AMSunWed.drunk.ts, 12AMThuSat.drunk.ts, 1AMThuSat.drunk.ts.

Minor Injury: [Data](#) and [Trellis](#)

Upward trend: 12AMSunWed.sober.ts, 2AMSunWed.sober.ts

Downward trend: 12AMThuSat.sober.ts, 1AMThuSat.sober.ts, 1AMSunWed.drunk.ts, 11PMThuSat.drunk.ts, 12AMThuSat.drunk.ts, 1AMThuSat.drunk.ts

Minimal Injury [Data](#) and [Trellis](#)

upward trend: 11PMSunWed.sober.ts, 2AMSunWed.sober.ts, 11PMThuSat.sober.ts, 2AMThuSat.sober.ts, 2AMSunWed.drunk.ts

downward trend: 1AMThuSat.sober.ts, 11PMSunWed.drunk.ts, 12AMSunWed.drunk.ts, 1AMSunWed.drunk.ts, 11PMThuSat.drunk.ts, 12AMThuSat.drunk.ts, 1AMThuSat.drunk.ts

Fatalities

Upward trend in 2AMSunWedSober and downward in 1AMSatThuDrunk. Data are small counts, mostly 0 some 1's 2's 3's and 4's.

Data Listing

```
> mto4.11PMSunWed.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  0  0  0  0  1  0  0  0  0  0  0
1993:  0  0  1  0  1  0  0  1  0  0  0  1
1994:  0  0  0  1  0  0  0  1  1  1  0  0
1995:  0  0  1  0  0  3  0  1  0  0  0  0
1996:  0  0  0  0  2  1  0  1  0  0  0  0
1997:  0  0  0  0  2  1  0  1  1  3  0  1
1998:  0  0  0  1  0  0  0  1  2  0  0  0
> MannKendall(mto4.11PMSunWed.sober.ts)
tau = 0.125,    sl =15.8%
> mto4.12AMSunWed.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  0  0  0  0  0  0  0  1  1  0  0
1993:  0  0  0  0  1  0  2  0  0  0  0  0
1994:  0  0  0  0  0  0  1  0  0  0  1  1
1995:  0  0  0  0  0  0  0  0  1  0  0  0
1996:  0  0  0  0  0  1  0  1  0  1  0  0
1997:  0  0  1  0  0  2  2  1  1  0  0  1
1998:  1  0  0  0  0  0  0  0  0  0  0  0
> MannKendall(mto4.12AMSunWed.sober.ts)
tau = 0.0825,   sl =35.62%
> mto4.1AMSunWed.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  0  0  0  0  0  1  0  0  0  0  0
1993:  0  0  0  0  0  0  0  0  0  0  1  0
1994:  0  1  0  0  1  1  0  0  0  0  0  0
1995:  0  1  0  0  0  0  0  0  0  1  0  3
1996:  0  1  0  0  0  0  1  1  0  1  0  0
1997:  0  0  0  0  0  1  0  1  0  0  1  0
1998:  0  0  0  0  0  0  0  0  0  0  0  0
> MannKendall(mto4.1AMSunWed.sober.ts)
tau = 0.035,    sl =70.03%
> mto4.2AMSunWed.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  0  0  0  0  0  0  1  0  0  0  0
1993:  0  0  0  0  0  0  0  0  0  0  0  0
1994:  1  0  0  0  0  0  1  0  0  0  0  0
1995:  0  1  0  0  2  0  0  0  1  0  1  0
1996:  0  0  0  1  0  0  0  0  0  0  0  0
1997:  0  0  1  0  0  0  0  0  0  0  0  1
1998:  0  0  0  0  1  1  1  0  0  0  0  0
> MannKendall(mto4.2AMSunWed.sober.ts)
tau = 0.112,    sl =21.21%
```

```

> #
mto4.11PMThuSat.sober.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  1  0  0  0  0  1  0  0  1  2  0  0
1993:  0  0  0  0  1  0  1  0  1  0  0  0
1994:  0  1  2  0  0  1  0  0  0  0  0  0
1995:  1  0  0  1  1  1  1  0  2  0  1  0
1996:  0  1  0  0  3  0  0  0  0  1  0  0
1997:  0  0  0  1  0  0  1  0  0  1  4  0
1998:  0  0  0  0  0  0  1  2  0  1  0  1
> MannKendall(mto4.11PMThuSat.sober.ts)
tau = 0.0348,  sl =69.44%
> mto4.12AMThuSat.sober.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  1  0  0  0  0  0  0  0  1  0  0
1993:  0  0  0  0  1  0  2  0  0  0  0  1
1994:  0  0  1  0  0  1  0  0  0  2  0  0
1995:  0  0  0  1  1  0  1  0  0  0  1  0
1996:  2  1  1  0  0  0  0  0  0  0  0  1
1997:  1  1  1  0  0  0  3  1  1  0  0  0
1998:  1  0  0  0  0  0  0  1  2  0  0  0
> MannKendall(mto4.12AMThuSat.sober.ts)
tau = 0.095,  sl =28.25%
> mto4.1AMThuSat.sober.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  0  1  1  0  0  0  0  0  0  1  0
1993:  0  0  0  1  0  0  0  0  0  0  0  0
1994:  1  0  0  1  0  0  0  0  0  1  1  0
1995:  1  1  1  0  0  0  1  0  0  0  1  0
1996:  0  0  1  0  0  0  2  0  0  0  0  0
1997:  1  0  0  0  0  0  0  0  1  1  0  0
1998:  0  0  0  0  0  1  0  1  0  0  0  2
> MannKendall(mto4.1AMThuSat.sober.ts)
tau = 0.0271,  sl =76.53%
> mto4.2AMThuSat.sober.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  0  1  0  0  0  0  0  1  0  0  0
1993:  0  0  0  0  1  0  0  0  0  0  0  0
1994:  0  1  1  1  1  0  0  0  0  0  0  0
1995:  0  0  0  1  0  0  0  0  0  0  0  1
1996:  0  1  0  0  0  0  2  0  0  1  0  0
1997:  0  0  0  1  0  1  0  1  1  1  0  0
1998:  0  0  0  1  0  1  1  0  1  1  0  0
> MannKendall(mto4.2AMThuSat.sober.ts)
tau = 0.171,  sl =5.763%

```

```

> #
mto4.11PMSunWed.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  0  1  0  0  0  0  0  1  0  0  0
1993:  0  1  0  0  0  1  0  1  0  0  0  2
1994:  0  1  1  0  1  0  2  1  0  2  1  0
1995:  0  0  0  1  0  3  0  1  3  2  0  1
1996:  0  0  1  0  1  0  1  0  1  1  0  0
1997:  0  0  2  0  0  0  1  2  0  0  0  0
1998:  0  0  0  0  0  1  0  0  0  0  0  0
> MannKendall(mto4.11PMSunWed.drunk.ts)
tau = -0.0479,    sl =58.54%
> mto4.12AMSunWed.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  1  0  0  2  1  3  0  0  0  1  0
1993:  0  2  0  0  0  0  1  1  1  1  0  1
1994:  0  0  1  0  1  0  0  0  0  1  0  1
1995:  0  1  0  0  1  0  1  0  2  1  0  0
1996:  0  0  0  0  0  0  1  2  0  1  0  0
1997:  1  0  0  0  1  0  0  0  0  1  0  1
1998:  0  0  0  0  0  0  0  2  0  0  1  0
> MannKendall(mto4.12AMSunWed.drunk.ts)
tau = -0.124,    sl =15.76%
> mto4.1AMSunWed.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  2  0  2  0  0  1  0  1  2  2  2
1993:  0  0  1  0  1  0  0  1  1  2  1  0
1994:  0  0  2  0  0  0  1  3  0  0  2  1
1995:  0  0  0  1  0  1  0  2  1  2  0  1
1996:  0  0  0  0  1  0  1  4  1  0  1  0
1997:  0  0  0  1  0  0  0  0  0  0  0  0
1998:  0  0  0  0  0  1  1  0  0  0  1  0
> MannKendall(mto4.1AMSunWed.drunk.ts)
tau = -0.203,    sl =1.872%
> mto4.2AMSunWed.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  1  0  0  1  1  0  1  0  0  0  0  0
1993:  0  1  0  0  0  0  1  0  0  1  0  0
1994:  1  0  0  2  0  3  2  1  1  0  0  3
1995:  0  0  1  0  0  0  1  2  0  0  0  0
1996:  0  0  0  0  0  1  0  1  0  0  1  0
1997:  0  0  0  0  0  0  1  1  0  0  0  0
1998:  0  0  0  1  0  0  1  0  1  0  0  0
> MannKendall(mto4.2AMSunWed.drunk.ts)
tau = -0.0967,    sl =27.39%

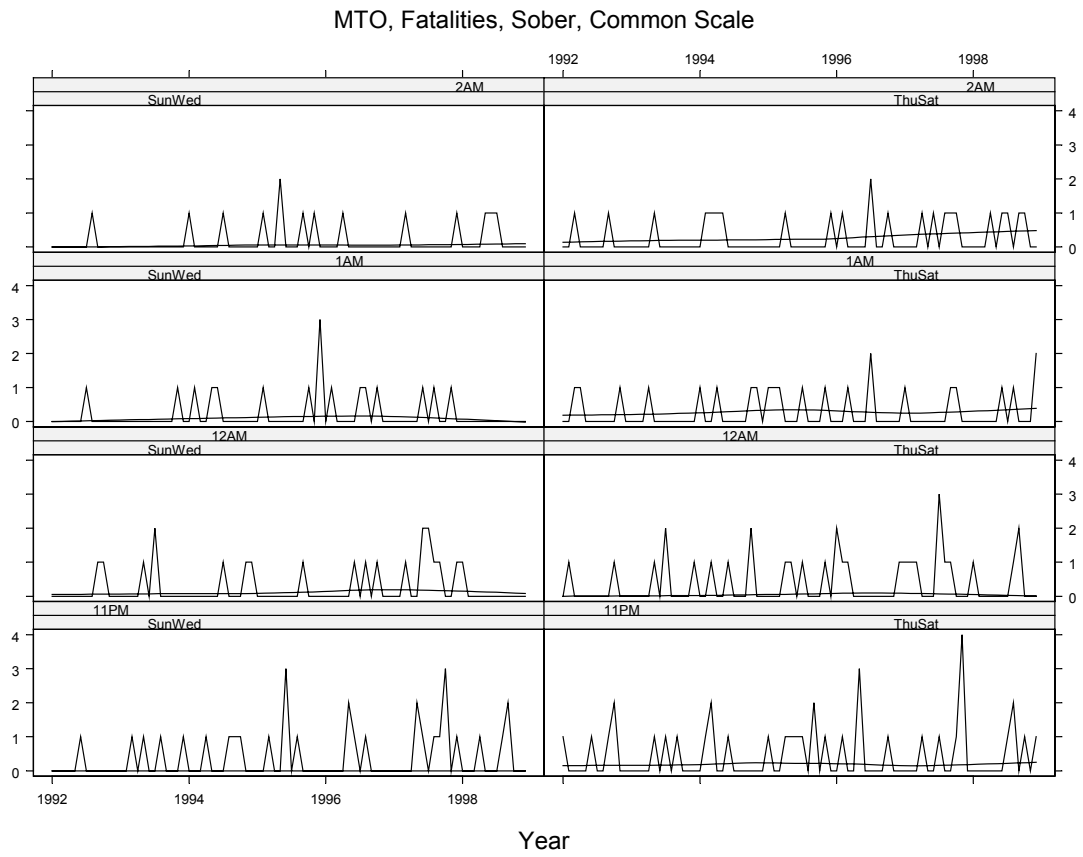
```

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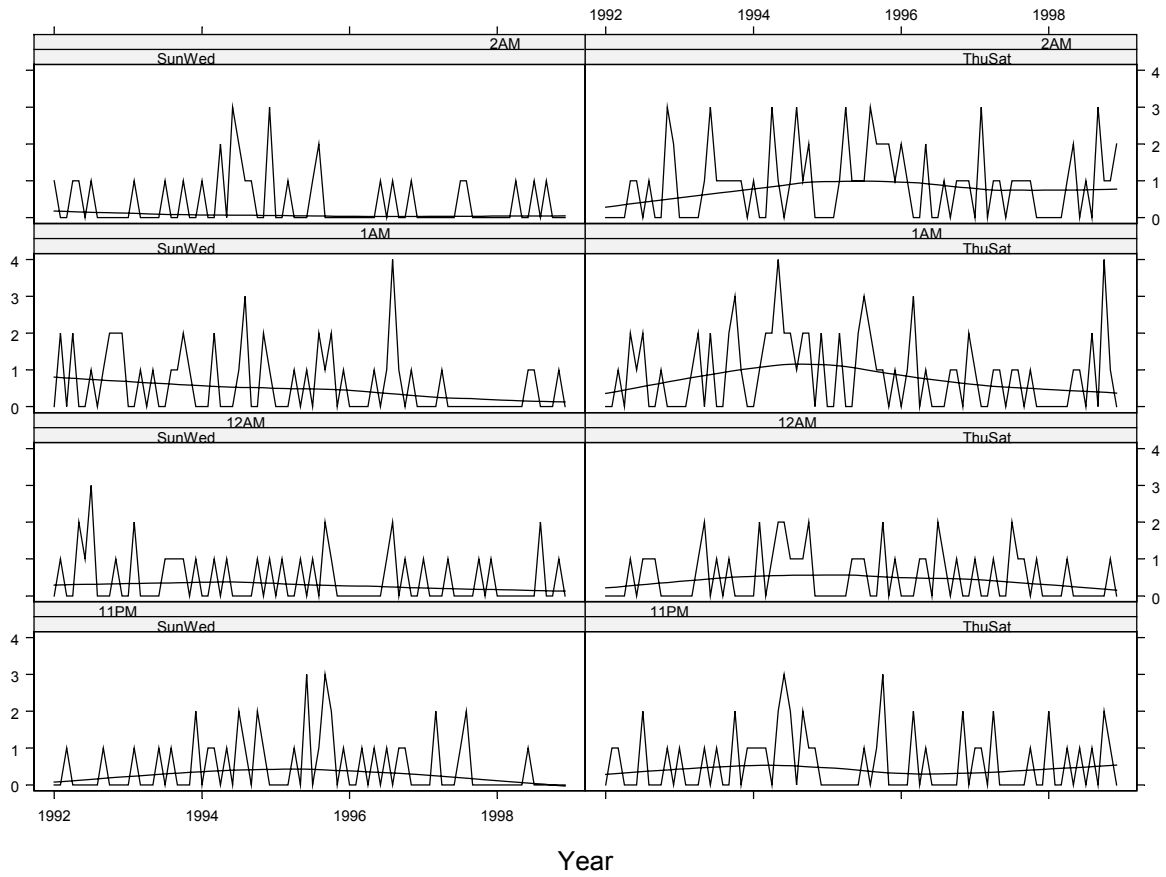
> #
mto4.11PMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  1  1  0  0  0  2  0  0  0  1  0
1993:  1  0  0  0  1  0  1  0  0  2  0  1
1994:  1  1  1  0  2  3  2  0  2  1  1  0
1995:  0  0  0  0  0  0  1  0  1  3  0  0
1996:  0  0  2  0  1  0  0  0  0  0  2  0
1997:  1  1  0  2  0  0  0  0  0  1  0  0
1998:  2  0  0  1  0  1  0  1  0  2  1  0
> MannKendall(mto4.11PMThuSat.drunk.ts)
tau = -0.0137,    sl =87.72%
> mto4.12AMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  0  0  0  1  0  1  1  1  0  0  0
1993:  0  0  0  1  2  0  1  0  1  0  0  0
1994:  0  2  0  1  2  2  1  1  1  2  0  0
1995:  0  0  0  0  1  1  1  0  0  2  0  1
1996:  0  0  0  1  1  0  2  1  0  1  0  0
1997:  1  0  0  1  0  0  2  1  1  0  1  0
1998:  0  0  0  1  0  0  0  0  0  0  1  0
> MannKendall(mto4.12AMThuSat.drunk.ts)
tau = -0.0465,    sl =59.68%
> mto4.1AMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  0  1  0  2  1  2  0  0  1  0  0
1993:  0  0  1  2  0  2  0  0  2  3  1  0
1994:  0  1  2  2  4  2  2  1  2  2  0  2
1995:  0  0  2  0  0  2  3  2  1  1  0  1
1996:  0  1  3  0  1  0  0  0  1  1  0  2
1997:  1  0  0  1  1  0  1  1  0  1  0  0
1998:  0  0  0  0  1  1  0  2  0  4  1  0
> MannKendall(mto4.1AMThuSat.drunk.ts)
tau = -0.0691,    sl =41.4%
> mto4.2AMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  0  0  0  1  1  0  1  0  0  3  2
1993:  0  0  0  0  1  3  1  1  1  1  1  0
1994:  1  0  0  3  1  0  1  3  1  2  0  0
1995:  0  0  1  3  1  1  1  3  2  2  2  1
1996:  2  1  0  0  2  0  0  1  0  1  1  1
1997:  0  3  0  1  1  0  1  1  1  1  0  0
1998:  0  0  0  1  2  0  1  0  3  1  1  2
> MannKendall(mto4.2AMThuSat.drunk.ts)
tau = 0.0719,    sl =39.75%

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Trellis Time Series Plots. Same Scale on Each Page.



MTO, Fatalities, Drunk, Common Scale



Major Injury

Downward trends: 12AMSunWed.drunk.ts, 1AMSunWed.drunk.ts, 12AMThuSat.drunk.ts, 1AMThuSat.drunk.ts

Data Listing

```
> mto3.11PMSunWed.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  1  0  1  0  4  9  1  1  1  4  2
1993:  3  1  0  0  1  2  3  1  3  2  2  3
1994:  0  2  4  5  2  5  6  5  3  1  1  2
1995:  2  1  1  2  4  9  2  3  1  1  4  0
1996:  2  5  3  0  3  1  2  3  7  1  1  2
1997:  5  0  2  4  2  0  5  3  0  2  2  3
1998:  1  0  1  2  3  6  5  3  1  2  4  0
> MannKendall(mto3.11PMSunWed.sober.ts)
tau = 0.069,    sl =38.87%
> mto3.12AMSunWed.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  1  2  0  2  3  0  3  2  2  4  1  1
1993:  0  0  0  3  3  1  2  3  1  1  0  1
1994:  4  1  3  0  2  3  2  0  2  3  3  3
1995:  3  1  1  1  3  1  4  5  2  0  2  5
1996:  0  0  3  0  1  1  3  1  2  0  0  3
1997:  1  1  2  2  0  1  3  1  3  2  0  1
1998:  0  1  1  1  2  0  2  1  2  1  0  1
> MannKendall(mto3.12AMSunWed.sober.ts)
tau = -0.1,    sl =22.11%
> mto3.1AMSunWed.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  0  1  1  1  2  2  3  3  0  1  2
1993:  1  1  0  1  0  0  3  1  1  0  3  0
1994:  0  1  1  2  6  2  2  6  2  1  2  1
1995:  2  4  4  4  2  4  3  2  1  1  1  2
1996:  0  1  0  0  0  0  0  3  2  5  1  0
1997:  2  0  0  0  1  1  7  0  1  0  4  2
1998:  1  0  0  0  0  1  1  3  1  2  2  1
> MannKendall(mto3.1AMSunWed.sober.ts)
tau = -0.0698,    sl =39.45%
> mto3.2AMSunWed.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  2  0  1  0  1  1  3  0  1  0  0
1993:  2  0  0  2  0  0  0  2  0  3  1  0
1994:  0  2  1  1  0  1  3  1  2  0  2  2
1995:  5  1  1  0  1  0  3  5  2  0  1  0
1996:  3  2  1  2  0  0  2  3  1  1  1  0
1997:  1  1  1  0  0  2  0  2  1  1  0  0
1998:  1  0  0  0  1  1  4  1  0  2  1  1
> MannKendall(mto3.2AMSunWed.sober.ts)
tau = -0.00304,    sl =97.4%
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```

> #
mto3.11PMThuSat.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  1  0  2  2  3  1  0  3  2  2  0  1
1993:  2  3  1  5  1  4  0  2  2  1  2  1
1994:  1  2  4  0  8  5  6  3  7  1  2  2
1995:  6  0  4  2  0  5  1  6  3  4  1  0
1996:  0  3  4  0  2  1  0  2  2  2  2  2
1997:  3  0  3  4  5  4  4  1  3  3  1  2
1998:  1  1  2  1  1  1  4  3  1  2  2  0
> MannKendall(mto3.11PMThuSat.sober.ts)
tau = 0.018,    sl =82.52%
> mto3.12AMThuSat.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  3  1  0  2  1  5  3  2  3  6  2
1993:  4  0  3  6  2  2  1  3  3  4  3  2
1994:  3  4  1  4  4  8  4  7  1  2  2  8
1995:  2  3  1  2  5  1  5  1  2  5  2  1
1996:  2  2  1  0  1  3  0  3  5  2  2  3
1997:  2  1  4  2  5  1  2  1  1  1  2  0
1998:  0  0  3  1  5  3  1  2  2  2  4  1
> MannKendall(mto3.12AMThuSat.sober.ts)
tau = -0.127,    sl =11.19%
> mto3.1AMThuSat.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  0  1  2  3  3  1  4  1  2  1  0
1993:  2  0  0  4  2  2  4  0  6  1  2  3
1994:  1  3  0  7  3  1  3  3  4  6  4  3
1995:  1  1  2  0  1  7  4  3  2  3  2  3
1996:  1  1  2  0  6  1  4  3  3  1  3  3
1997:  1  0  1  2  2  0  3  3  1  3  3  0
1998:  0  1  1  0  0  3  2  2  3  1  3  2
> MannKendall(mto3.1AMThuSat.sober.ts)
tau = -0.0385,    sl =63.51%
> mto3.2AMThuSat.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  1  0  2  0  0  1  2  3  1  0  1
1993:  1  1  1  3  3  2  3  2  2  2  0  1
1994:  1  1  2  1  2  3  5  3  4  5  4  5
1995:  3  3  2  2  0  2  5  2  2  5  2  0
1996:  1  0  3  1  4  4  2  6  1  2  2  1
1997:  0  0  2  0  3  4  3  2  0  2  3  0
1998:  1  0  3  1  1  3  0  2  2  0  3  0
> MannKendall(mto3.2AMThuSat.sober.ts)
tau = 0.0112,    sl =89.3%

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> #
mto3.11PMSunWed.drunk.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  0  0  2  2  4  0  1  0  0  1  1
1993:  0  1  0  1  0  4  3  2  3  3  0  0
1994:  2  4  1  2  0  2  4  2  2  3  2  2
1995:  1  2  1  1  3  0  0  3  0  1  2  1
1996:  1  1  0  1  0  2  1  3  1  0  0  1
1997:  1  0  0  1  0  0  1  1  1  1  1  0
1998:  1  1  2  1  0  0  2  1  3  1  1  1
> MannKendall(mto3.11PMSunWed.drunk.ts)
tau = -0.062,    sl =45.63%
> mto3.12AMSunWed.drunk.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  0  2  1  2  1  2  4  2  3  1  1
1993:  1  1  0  1  0  0  2  2  1  1  1  1
1994:  1  1  0  2  2  2  0  1  2  3  2  1
1995:  0  1  2  3  2  5  2  1  1  0  1  0
1996:  0  0  1  1  1  1  0  4  1  0  0  1
1997:  1  1  0  2  0  1  0  0  1  0  1  0
1998:  1  2  1  2  2  1  1  0  0  1  1  1
> MannKendall(mto3.12AMSunWed.drunk.ts)
tau = -0.147,    sl =8.024%
> mto3.1AMSunWed.drunk.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  3  2  2  3  2  3  0  1  0  2  1
1993:  0  5  1  2  0  2  2  4  0  2  2  3
1994:  0  0  4  4  2  5  6  3  4  2  6  2
1995:  3  3  5  3  3  5  5  4  5  5  5  1
1996:  0  2  3  3  1  1  0  2  0  1  0  0
1997:  2  1  3  6  1  3  1  3  1  0  1  0
1998:  1  2  2  0  1  1  0  1  1  2  0  0
> MannKendall(mto3.1AMSunWed.drunk.ts)
tau = -0.142,    sl =7.573%
> mto3.2AMSunWed.drunk.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  0  2  0  2  2  2  3  0  4  1  0
1993:  1  3  2  2  1  0  3  2  0  1  2  4
1994:  1  2  2  2  3  1  1  0  4  2  1  0
1995:  2  0  1  3  3  1  3  1  1  3  1  0
1996:  2  1  4  0  2  1  1  3  3  1  5  0
1997:  2  0  2  1  2  0  1  2  3  1  0  1
1998:  4  1  0  1  0  2  1  2  1  2  3  2
> MannKendall(mto3.2AMSunWed.drunk.ts)
tau = -0.0241,    sl =77.07%

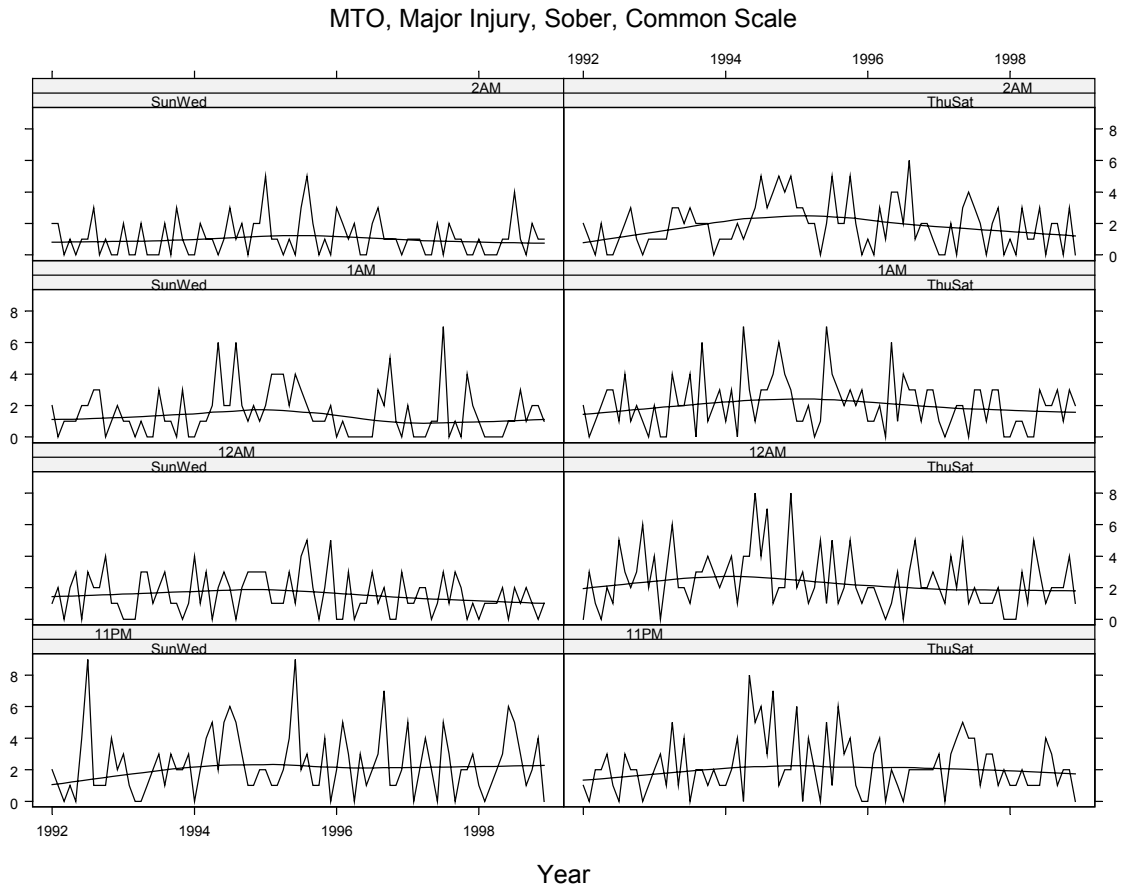
```

```

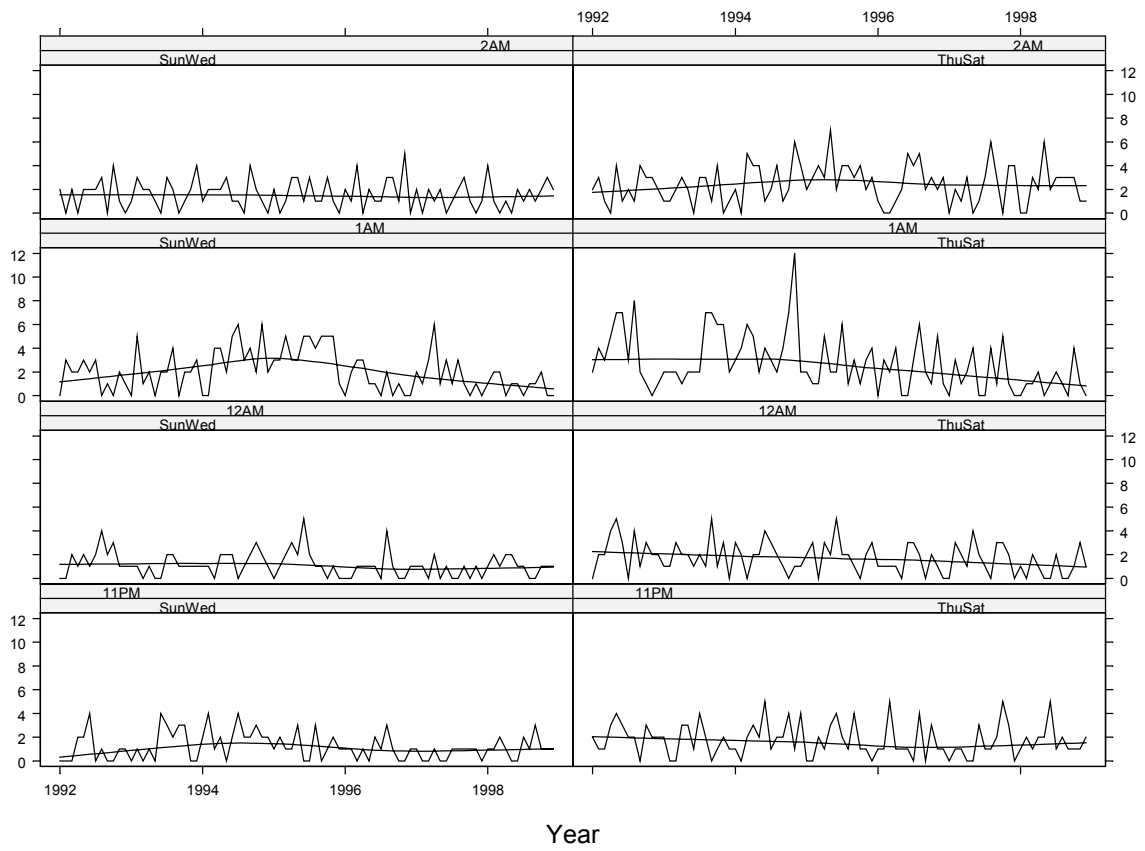
> #
mto3.11PMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  1  1  3  4  3  2  2  0  3  2  2
1993:  2  0  0  3  3  1  4  2  0  1  2  1
1994:  1  0  2  3  2  5  1  2  2  4  1  4
1995:  0  0  2  1  3  4  2  1  4  1  1  0
1996:  1  1  5  1  1  1  0  4  0  3  1  1
1997:  0  1  1  0  0  3  1  1  2  5  3  0
1998:  1  2  1  2  2  5  1  2  1  1  1  2
> MannKendall(mto3.11PMThuSat.drunk.ts)
tau = -0.0872,    sl =28.45%
> mto3.12AMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  0  2  2  4  5  3  0  4  1  3  2  2
1993:  1  1  3  2  2  1  2  1  5  1  3  0
1994:  3  2  0  2  2  4  3  2  1  0  1  1
1995:  2  3  0  3  2  5  2  2  1  0  2  3
1996:  1  1  1  1  0  3  3  2  0  2  1  0
1997:  0  3  2  1  4  2  1  0  3  3  2  0
1998:  1  0  2  1  0  0  2  0  0  1  3  1
> MannKendall(mto3.12AMThuSat.drunk.ts)
tau = -0.197,    sl =1.555%
> mto3.1AMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  4  3  5  7  7  3  8  2  1  0  1
1993:  2  2  2  1  2  2  2  7  7  6  6  2
1994:  3  4  6  5  2  4  3  2  4  7  12  2
1995:  2  1  1  5  2  2  6  1  3  1  3  4
1996:  0  3  2  4  0  0  3  6  2  1  5  1
1997:  0  3  1  2  4  0  0  4  1  5  1  0
1998:  0  1  1  2  0  1  2  1  0  4  1  0
> MannKendall(mto3.1AMThuSat.drunk.ts)
tau = -0.301,    sl =0.01401%
> mto3.2AMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  3  1  0  4  1  2  1  4  3  3  2
1993:  1  1  2  3  2  0  3  3  1  4  0  1
1994:  2  0  5  4  4  1  2  4  1  2  6  4
1995:  2  3  4  3  7  2  4  4  3  4  2  3
1996:  1  0  0  1  2  5  4  5  2  3  2  3
1997:  0  2  1  3  0  1  3  6  3  0  4  4
1998:  0  0  3  2  6  2  3  3  3  3  1  1
> MannKendall(mto3.2AMThuSat.drunk.ts)
tau = 0.0399,    sl =62%

```

Trellis Time Series Plots: Common scale on each page.



MTO, Major Injury, Drunk, Common Scale



Minor Injury

Upward trend: 12AMSunWed.sober.ts, 2AMSunWed.sober.ts

Downward trend: 12AMThuSat.sober.ts, 1AMThuSat.sober.ts, 1AMSunWed.drunk.ts,
11PMThuSat.drunk.ts, 12AMThuSat.drunk.ts, 1AMThuSat.drunk.ts

Data Tabulation

> mto2.11PMSunWed.sober.ts

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1992:	10	8	10	9	12	23	16	16	17	6	15	13
1993:	8	9	10	6	7	20	18	21	15	7	10	18
1994:	13	17	17	21	22	14	19	13	18	13	19	20
1995:	13	13	20	15	13	18	25	17	11	17	25	16
1996:	13	27	15	11	14	18	26	20	18	11	14	10
1997:	17	15	8	12	11	18	23	8	9	8	13	15
1998:	12	11	12	9	17	12	12	18	15	13	14	15

> MannKendall(mto2.11PMSunWed.sober.ts)

tau = 0.0177, sl =81.92%

> mto2.12AMSunWed.sober.ts

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1992:	10	5	8	9	3	6	8	3	9	9	7	10
1993:	5	2	8	2	5	10	10	10	8	7	6	4
1994:	7	7	6	16	12	13	13	14	11	7	9	17
1995:	6	8	5	8	9	9	16	8	6	6	14	16
1996:	10	9	14	7	23	12	10	12	19	9	8	18
1997:	13	6	11	1	8	6	13	20	4	9	6	10
1998:	8	7	4	8	10	12	8	9	15	5	10	12

> MannKendall(mto2.12AMSunWed.sober.ts)

tau = 0.161, sl =3.675%

> mto2.1AMSunWed.sober.ts

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1992:	6	11	4	8	3	7	13	5	9	9	13	12
1993:	9	3	3	6	7	2	8	9	3	6	6	10
1994:	11	2	8	11	9	8	13	14	7	7	6	15
1995:	4	5	11	11	3	13	3	12	2	8	9	6
1996:	12	11	13	3	11	11	7	4	6	9	7	10
1997:	11	5	6	3	4	10	8	5	4	3	10	5
1998:	8	1	7	11	9	10	16	8	2	8	7	2

> MannKendall(mto2.1AMSunWed.sober.ts)

tau = -0.0459, sl =55.27%

> mto2.2AMSunWed.sober.ts

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1992:	3	5	3	8	3	3	5	9	5	4	0	2
1993:	6	2	1	4	4	10	4	3	2	1	0	9
1994:	10	2	9	6	5	11	9	9	4	4	9	11
1995:	7	6	8	5	1	7	13	12	6	4	4	6
1996:	9	11	2	8	9	5	3	7	5	5	9	8
1997:	8	3	8	7	4	7	7	13	10	4	8	6
1998:	7	5	9	5	3	6	11	7	5	7	5	6

> MannKendall(mto2.2AMSunWed.sober.ts)

tau = 0.186, sl =1.634%

```

> #
mto2.11PMThuSat.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:   9  7  8 14 20 20 21 20  9 14 13 12
1993:  13 10  4 10 16 20 19 15 16 21 13 11
1994:  13 14 14  9 14 14 19 18 18  9 22 14
1995:  21  9 17  8 15 20 22 19 14 21 13 15
1996:  19 14 14 10 12 16 12 14 19 17 20 14
1997:  14 15 21  8 18 22 16 25  6 15 15 15
1998:  12 14 14 15 22  3 14 23 16 13  9 14
> MannKendall(mto2.11PMThuSat.sober.ts)
tau = 0.079,    sl =30.48%
> mto2.12AMThuSat.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  10  8  6 10 10  8  9  8  6  8  7  3
1993:   8  8  7  9  9  5 13 16  8 10  9  5
1994:  21  5  7  8 15 11 14 15 14 14 14 12
1995:   5  7 11  9  5 10 18 11 14 10  5 17
1996:   9  9  9  4 11 13  7 14 17  9 18  6
1997:   7  7  2 12 10 11 16  9  7 11 13  8
1998:   9  7 14  6 15  9  8 14 13  9  9 12
> MannKendall(mto2.12AMThuSat.sober.ts)
tau = 0.117,    sl =13.07%
> mto2.1AMThuSat.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:   5 10 17  6 12 13  8 15 13 29  7  6
1993:   4 12 10 12 11 17 10 11 10 20 13 11
1994:  14  8 14 10 25 12 15 19 14 17 18 10
1995:  14 13  8  8 11 10 19 12 17 16 13 14
1996:  14 12 10  9  8 17 16 14 11 16 10 10
1997:   7  8  5  9  6  8  7  6  5  7 15  9
1998:   6  2  4  4  9  8  8 13  3  9 11  8
> MannKendall(mto2.1AMThuSat.sober.ts)
tau = -0.239,    sl =0.1736%
> mto2.2AMThuSat.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:   1  3  9  4 14  8  3 11  9 10  4  7
1993:   4  4  3  4  7  7  8 11 11 12  5  6
1994:   9 10 13  9  5 10 17 17 15 20 11 14
1995:  12  5  4 12  3 10 11  9  9 10  7  7
1996:  14  5  8 13  9 16  3 14  8 12 19  8
1997:  11 11 13  3 12 12  6 16 11 10 10  6
1998:   6  3  9  5  6  7  4 11 11  6 10  7
> MannKendall(mto2.2AMThuSat.sober.ts)
tau = 0.0881,    sl =25.11%

```

```

> #
mto2.11PMSunWed.drunk.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  1  1  0  4  6 10  3  5  6  2  6
1993:  1  2  1  3  5 10  2  5  6  3  4  6
1994:  1  1  5  3  5  6  5  5  2  3  2  4
1995:  3  1  3  3  4  5  5  5  4  6  2  3
1996:  6  0  4  3  2  1  5  4  2  6  6  1
1997:  3  3  2  4  3  3  7  1  4  4  2  4
1998:  1  3  4  2  1  5  4  3  3  1  4  4
> MannKendall(mto2.11PMSunWed.drunk.ts)
tau = -0.0508,    sl =52.32%
> mto2.12AMSunWed.drunk.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  1  3  2  2  3  6  3  2  7  6  6  3
1993:  1  0  2  2  2  4  2  2  4  8  2  4
1994:  2  1  5  4  3  0  1  9  5  5  3  3
1995:  2  1 13  0  7  5  7  7  3  4  2  1
1996:  3  2  4  3  5  5  1  4  0  2  4  4
1997:  4  1  2  3  3  2  2  2  5  1  1  4
1998:  3  1  2  2  2  7  3  4  4  4  3  4
> MannKendall(mto2.12AMSunWed.drunk.ts)
tau = -9.32e-4,    sl =99.37%
> mto2.1AMSunWed.drunk.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  6  7  6  9  4  4 10  5  8  6  7  4
1993:  4  7  2  3  4  5 11 14  7  5  7  9
1994:  2  5  9 13  7  3 10  7 11 12  4  8
1995:  4  3  6  7  5  7  8 11  5  6  2  4
1996:  6 11  8  5  7  6  2  6  6  3  3  2
1997:  2  0  3  4  8  4  1  7  4  1  6  0
1998:  3  1  4  4  3  0  6  1  2  2  1  2
> MannKendall(mto2.1AMSunWed.drunk.ts)
tau = -0.341,    sl =0.001058%
> mto2.2AMSunWed.drunk.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  4  2  4  6  1  2  4  1  2  3  4  9
1993:  4  2  4  6  3  4  6  3  1  4  2  2
1994:  2  3  2  4  3  8  5  7  5  2  5  1
1995:  2  5  5  5  4  8  6  2  1  4  6  9
1996:  5  6  6  3  3  3  7  6  3  4  6  3
1997:  4  6  6  3  3  8  5  7  4  2  3  3
1998:  7  4  4  3  2  6  2  6  4  5  1  2
> MannKendall(mto2.2AMSunWed.drunk.ts)
tau = 0.103,    sl =19.35%

```

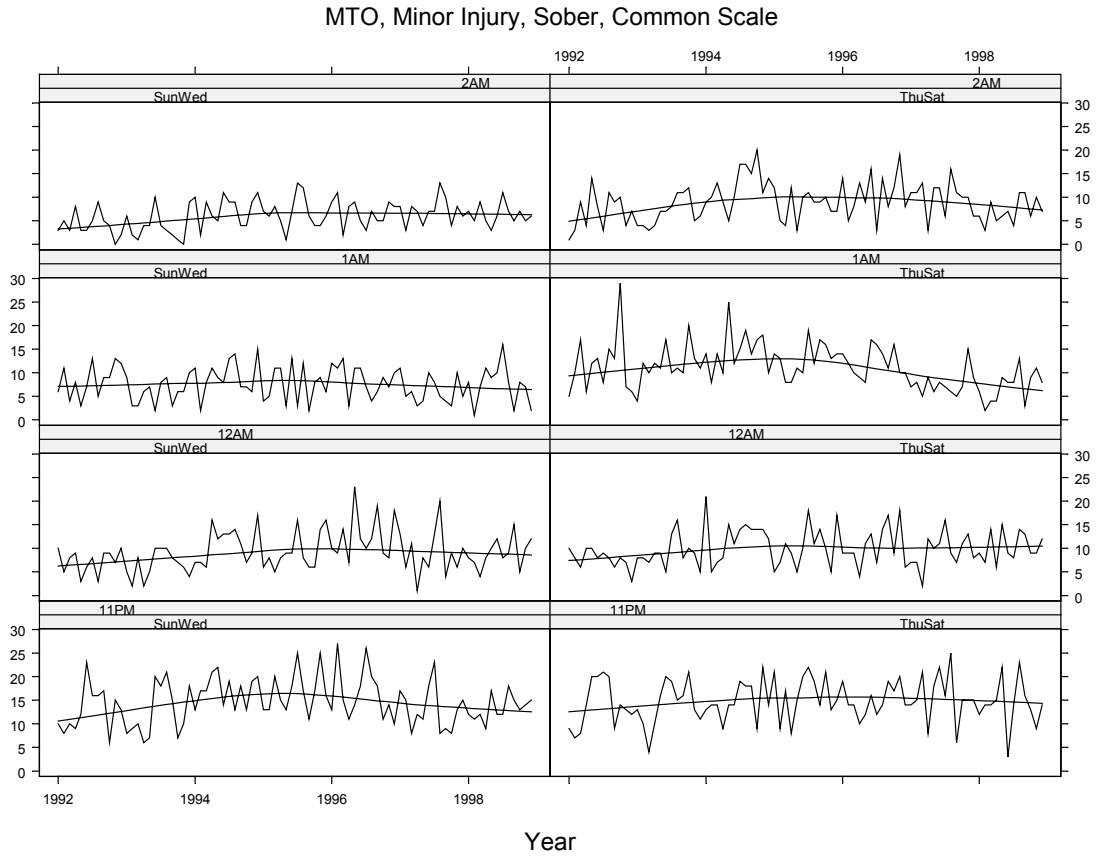


```

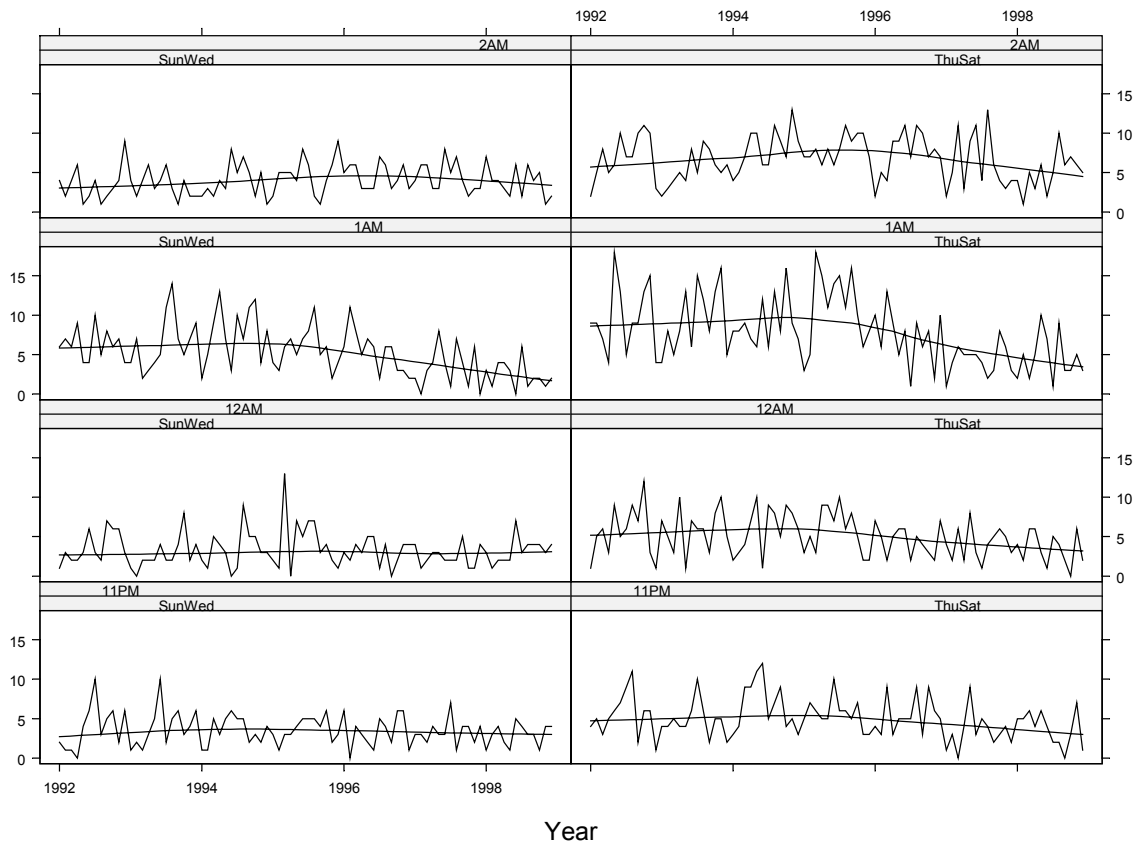
> #
mto2.11PMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  4  5  3  5  6  7  9 11  2  6  6  1
1993:  4  4  5  4  4  6 10  6  2  5  5  2
1994:  3  4  9  9 11 12  5  7  9  4  5  3
1995:  5  7  6  5  5 10  6  6  5  7  3  3
1996:  4  3  9  3  5  5  5  9  3  9  6  5
1997:  1  3  0  4  9  3  5  4  2  3  4  2
1998:  5  5  6  4  6  4  2  2  0  3  7  1
> MannKendall(mto2.11PMThuSat.drunk.ts)
tau = -0.186,    sl =1.792%
> mto2.12AMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  1  5  6  3  9  5  6  9  7 12  3  1
1993:  7  5  3 10  1  7  6  6  3  8 10  5
1994:  2  3  4  7 10  1  9  8  5  9  8  6
1995:  3  5  3  9  9  7 10  6  8  5  2  2
1996:  7  5  2  5  6  6  2  5  4  3  2  7
1997:  4  2  6  2  8  3  1  4  5  6  5  3
1998:  4  2  6  6  3  1  5  4  2  0  6  2
> MannKendall(mto2.12AMThuSat.drunk.ts)
tau = -0.209,    sl =0.7314%
> mto2.1AMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  9  9  7  4 18 13  5  9  9 13 15  4
1993:  4  8  5  8 13  6 15 12  8 13 16  5
1994:  8  8  9  7  6 12  6 13  8 16  9  7
1995:  3  5 18 15 11 14 15 11 16 10  6  8
1996: 10  6 13  9  5  8  1  9  6  8  2 10
1997:  1  4  6  5  5  5  4  2  3  8  6  3
1998:  2  5  2  5 10  7  1  9  3  3  5  3
> MannKendall(mto2.1AMThuSat.drunk.ts)
tau = -0.316,    sl =0.003663%
> mto2.2AMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  5  8  5  6 10  7  7 10 11 10  3
1993:  2  3  4  5  4  8  5  9  8  6  5  6
1994:  4  5  7 10 10  6  6 11  9  7 13  9
1995:  7  7  8  6  8  6  8 11  9 10 10  7
1996:  2  5  4  9  9 11  7 11 10  7  8  7
1997:  2  5 11  3  9 11  4 13  6  4  3  4
1998:  4  1  5  3  6  2  5 10  6  7  6  5
> MannKendall(mto2.2AMThuSat.drunk.ts)
tau = -0.0346,    sl =65.77%

```

Trellis Time Series Plots



MTO, Minor Injury, Drunk, Common Scale



Minimal Injury

upward trend: 11PMSunWed.sober.ts, 2AMSunWed.sober.ts,
11PMThuSat.sober.ts, 2AMThuSat.sober.ts, 2AMSunWed.drunk.ts

downward trend: 1AMThuSat.sober.ts, 11PMSunWed.drunk.ts,
12AMSunWed.drunk.ts, 1AMSunWed.drunk.ts,
11PMThuSat.drunk.ts, 12AMThuSat.drunk.ts,
1AMThuSat.drunk.ts

Data Tabulation

```
> mto1.11PMSunWed.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  10  13  11  23   8  21  23  17   7  14  19  29
1993:  10  10  10  14  25  14  13  20  16  13  11  22
1994:  27  30  24  20  25  20  23  21  20  27  18  22
1995:  16  30  26  21  30  21  35  40  18  23  44  18
1996:  22  22  35  14  27  29  38  17  15  24  28  12
1997:  50  15  23  12  16  26  29  30  17  15  16  27
1998:  17  16  21  11  17  35  26  19  14  14  18  25
> MannKendall(mto1.11PMSunWed.sober.ts)
tau = 0.158,    sl =3.673%
> mto1.12AMSunWed.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:   8   7   5   9   8   9   7  14   5  12  19  19
1993:  12   9  20  10   6  12  11  12  11   8   7  14
1994:  14   9  15   9  16  11  12  17   9   5  10  16
1995:  11  16  10  16  18  14  19  14  16  10  24  19
1996:  10  14  24  12  13  17  18  13   6  17  10  13
1997:  20  10  12  10   7  10  15  16  12  28  17  11
1998:  13   8  10   9   7  11  14   6   6   8  10  15
> MannKendall(mto1.12AMSunWed.sober.ts)
tau = 0.0858,    sl =26.26%
> mto1.1AMSunWed.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  12  10   8   6   5  18  10  11   8   9   5  12
1993:   4   4   5   7   1   9   9   7   8  11   2  12
1994:  16  19  10   8  12  18  17  16  13  11  11  11
1995:  11  12  13   6  16  17  12  13   8   6  12  17
1996:  15  14  15  11   6  10  11  15   7  14  11   6
1997:  15   4  15   8   7  14   9  10   6   7   8  10
1998:  11   3  10  10   5   8   9   4   2  11   8  12
> MannKendall(mto1.1AMSunWed.sober.ts)
tau = -0.0302,    sl =69.53%
> mto1.2AMSunWed.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:   5   3   4   2   4   3   3   4   4   6   5   5
1993:   5   5   4   8   8   9   9   6   9   4   6   4
1994:   9   9  12  10   5   8   8   8   8   8   5   7
1995:   9   4   5   9   4  11  10   7   4   9  11  10
1996:   9   9   9   8  13   8  14  18   6  13  14  14
1997:   6  11   6   9   9  17  12  13   6  11   9   7
1998:   6   4   4   6   5   4   8   9   4   6   8   5
> MannKendall(mto1.2AMSunWed.sober.ts)
tau = 0.252,    sl =0.1183%
```

```

> #
mtol.11PMThuSat.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  21  12  22  21  18  26  21  26  14  22  21  20
1993:  15  20  10  11  19  15  24  22  13  28  15  16
1994:  31  22  13  24  35  23  25  23  27  28  21  28
1995:  36  21  15  16  20  27  33  19  21  22  28  27
1996:  23  21  24  19  27  47  18  13  32  26  21  25
1997:  35  25  24  10  32  26  25  28  11  21  22  26
1998:  25  20  21  19  39  26  19  23  32  12  25  11
> MannKendall(mtol.11PMThuSat.sober.ts)
tau = 0.139,    sl =6.696%
> mtol.12AMThuSat.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:   5   6   5   8  20  14  14  15   5  13  13   8
1993:  18  12   6   3  13  10  15  22  16  18  12  12
1994:  19  12  12  14  25  12  15  13  16  21   7  23
1995:  12  10   5  14  20  21  23  22  13  24  11  14
1996:  18  11  13   7  16  19  11  11  14  18  20   8
1997:  12  18  19   7  19  10  13  12  11   7  11  13
1998:  11   8  10   7  17  18  14  18  17  15  20  19
> MannKendall(mtol.12AMThuSat.sober.ts)
tau = 0.0881,    sl =24.83%
> mtol.1AMThuSat.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  11  18  14  12  24  10  11  22  25  22   9  13
1993:   7  19   9  10  13  18  18  20  10  22  11  11
1994:  14  15  19  14  23  16  17  16  19  30  16  16
1995:  22   7  17  20  11  21  24  16  19  33  21  27
1996:  27  25  13  17  11  16  19  16  21  19  14  13
1997:   9  12  17   8  17  19   9  14  11  12  20   9
1998:  11   5  22  11  12   6  11  19   8  10   6  10
> MannKendall(mtol.1AMThuSat.sober.ts)
tau = -0.134,    sl =7.736%
> mtol.2AMThuSat.sober.ts
      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  13   5   6   7  16   7  10   9  10  12  10   9
1993:   5  10   6   9   8  14   9  14  10  11   9   8
1994:  16  10   7  10  14   9  14   8  14  15  14  17
1995:  36  11  10   2  12  13  12  10  14  26  12  24
1996:  10  14  17   9  11  16  12  11  20  11  10  14
1997:   9  17  15  12  18  10   9  15  14  19  21   8
1998:   7   4   6   5  13   4   9  18  14   7  17  17
> MannKendall(mtol.2AMThuSat.sober.ts)
tau = 0.173,    sl =2.367%

```

```

> #
mtol.11PMSunWed.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  1  3  4  5  5  5  2  8  3  4  5  3
1993:  3  2  2  4  1  2  5  7  2  3  2  5
1994:  2  3  3  1  3  7  1  4  0  3  6  5
1995:  3  3  4  2  1  4  6  7  5  3  2  7
1996:  3  4  5  4  2  3  6  6  1  2  2  2
1997:  0  1  1  3  2  0  2  0  2  2  1  1
1998:  1  3  0  5  3  1  2  3  3  0  0  1
> MannKendall(mtol.11PMSunWed.drunk.ts)
tau = -0.273,    sl =0.05639%
> mtol.12AMSunWed.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  1  2  5  2  3  4  4  2  5  6  3
1993:  2  2  4  5  3  8  6  6  3  4  1  7
1994:  1  1  2  3  2  7  6  5  9  5  8  8
1995:  2  3  5  5  2  5  4  9  4  4  5  2
1996:  1  3  3  3  4  1  5  5  1  2  2  0
1997:  3  1  3  1  1  1  8  1  0  6  4  0
1998:  3  0  2  5  2  1  5  4  3  3  2  2
> MannKendall(mtol.12AMSunWed.drunk.ts)
tau = -0.156,    sl =4.74%
> mtol.1AMSunWed.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  5  3  1  9  6  4  5  6  5  5  8  0
1993:  5  4  4  5  7  6  11  5  8  6  2  2
1994:  3  2  7  10  8  5  7  6  4  6  4  7
1995:  4  2  8  8  4  8  5  9  6  0  5  3
1996:  6  11  2  4  2  3  1  3  3  9  2  2
1997:  4  2  5  3  1  1  2  3  4  3  3  3
1998:  1  0  3  3  1  3  4  0  2  1  0  1
> MannKendall(mtol.1AMSunWed.drunk.ts)
tau = -0.352,    sl =6.086e-4%
> mtol.2AMSunWed.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  3  0  5  2  2  3  4  3  4  4  0  8
1993:  2  1  1  2  4  2  2  3  4  1  5  5
1994:  2  5  2  2  1  2  9  3  4  7  3  2
1995:  2  3  5  3  7  4  3  8  2  2  4  2
1996:  3  2  4  2  3  3  4  6  5  4  0  3
1997:  3  3  3  2  5  4  4  5  2  4  2  5
1998:  7  5  4  5  6  2  3  4  3  0  3  4
> MannKendall(mtol.2AMSunWed.drunk.ts)
tau = 0.157,    sl =4.957%

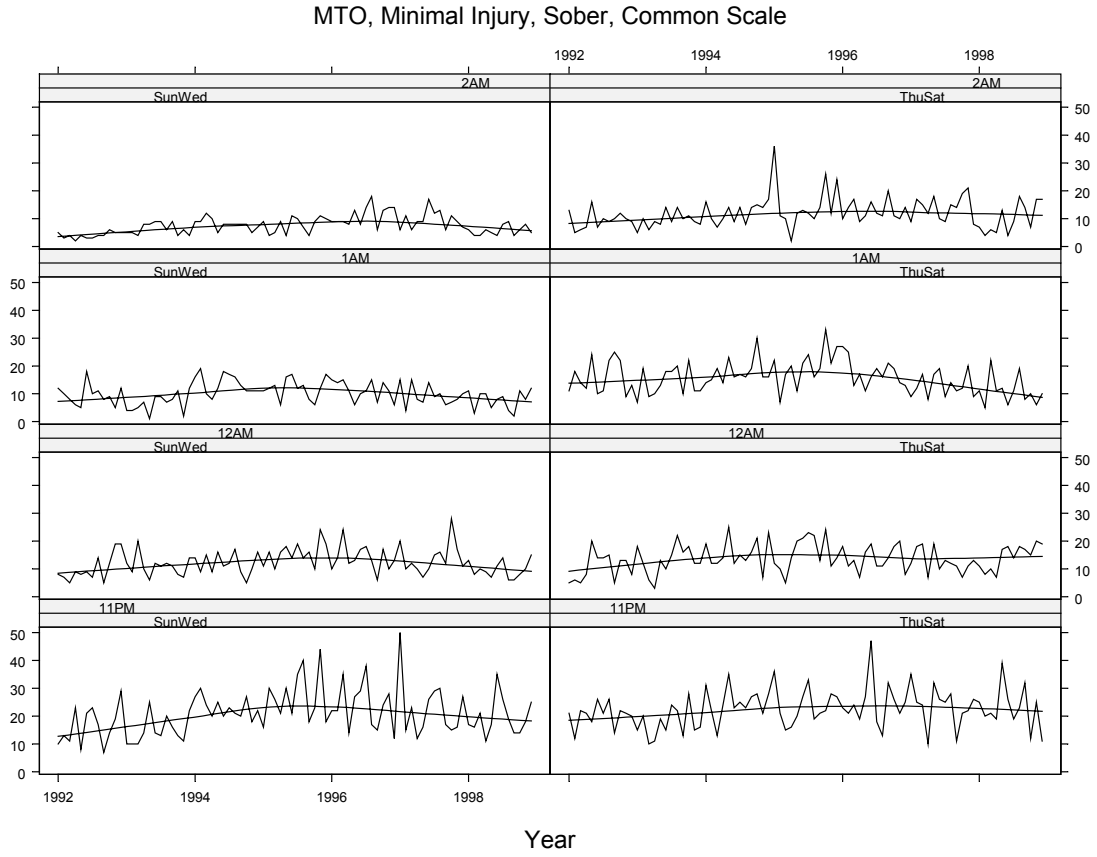
```

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> #
mtol.11PMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  3  3  9  7  7  5  6  5  4  3  1
1993:  2  3  3  4  6  3  9  4  4  4  5  2
1994:  1  3  4  6  3  5  6  4  7  6  6  7
1995:  1  5  6  8  5  7  7  2  5  3  4  4
1996:  3  5  6  3  5  2  8  6  1  5  2  3
1997:  1  6  3  3  2  4  4  4  7  4  1  0
1998:  0  5  0  1  4  1  4  2  4  1  3  3
> MannKendall(mtol.11PMThuSat.drunk.ts)
tau = -0.189,    sl =1.594%
> mtol.12AMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  2  7  5  4  6  8  3  9  2  8  3  5
1993:  3  4  3  4  5  5  6  3  3  7  7  5
1994:  4  2  1  6  5  6  5  9  5  7  7  3
1995:  3  4  7  5  7  5  3  5  6  8  5  5
1996:  7  4  3  2  5  3  4  3  4  5  3  2
1997:  1  0  0  0  8  2  0  6  3  5  5  5
1998:  0  0  5  6  3  5  2  7  5  1  3  2
> MannKendall(mtol.12AMThuSat.drunk.ts)
tau = -0.191,    sl =1.527%
> mtol.1AMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  6  9  8 10 11  5 13 10  7 12 11  1
1993:  4  7  5  6 11  7  2  6 10  7  9  2
1994:  7  8  6  9 10 11  9  8  6 11  9 10
1995:  5  5  6 10  3  4 10 10  2 12  7  8
1996:  6 12  8  7  5 10  9  4  9  6  5  2
1997:  2  6  6  5  3  6  1  7  8  9  7  1
1998:  1  3  2  2  2  6  5  4  2  5  4  3
> MannKendall(mtol.1AMThuSat.drunk.ts)
tau = -0.317,    sl =0.003898%
> mtol.2AMThuSat.drunk.ts
  Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
1992:  4  5  7  7  9 12 11  5 11  7  8  3
1993:  1  4  4  3  7  3  4  9  2  7  3  4
1994:  3  4  9  9  6  9 11  8  5  6  6  5
1995: 11  4  4  7  2 10  7  8  8  7  8  2
1996:  5 10  7  4  6 12  5  6  5  7 13  4
1997:  8  7  6  1 11  4  6  9  8  7  8  6
1998:  5  8  4  5  8  5  4 10  5  4  5  5
> MannKendall(mtol.2AMThuSat.drunk.ts)
tau = 0.0118,    sl =88.24%

```

Trellis Time Series Plots



MTO, Minimal Injury, Drunk, Common Scale

