Interval dependency and unequally spaced measurements
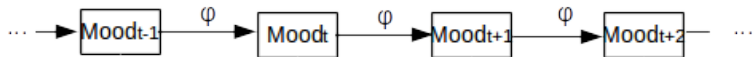
Modeling Intensinve Longitudinal Data

Noémi K. Schuurman
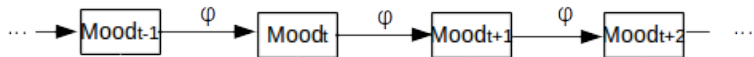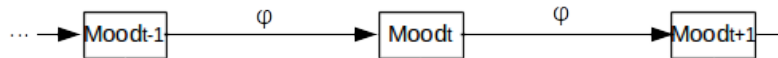

Caveat Clip

Equal spacing between measurements

Researcher 1: half-hourly effect

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Equal spacing between measurements

Researcher 1: half-hourly effect

Researcher 2: hourly effect

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Equal spacing between measurements

Researcher 1: half-hourly effect

Researcher 2: hourly effect

Both sets of measurements are neatly evenly spaced.

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Effects depend on interval size

Researcher 1: half-hourly effect

Researcher 2: hourly effect
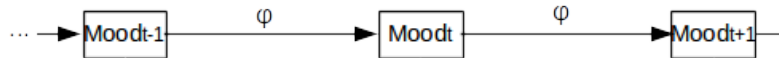
AR model: effect depends on interval

▶ Half-hourly effect:
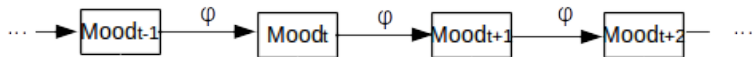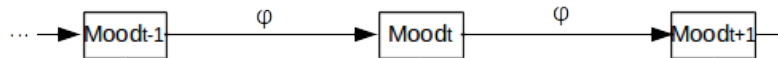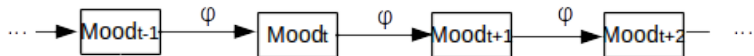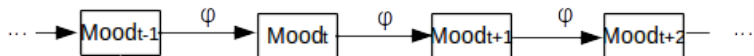$\phi_{res1} = .5$

▶ Hourly effect: $\phi_{res2} = \phi_{res1}^2 = .25$

Unequal spacing between measurements

Researcher 1: half-hourly effect

Researcher 2: hourly effect

Researcher 3: blended effect

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Unequal spacing between measurements

Solutions for unequally spaced measurements:

▶ AR models are discrete time models: *Continuous time models* can take the length of the time intervals into account.

Unequal spacing between measurements

Solutions for unequally spaced measurements:

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- ► Ad hoc solution: add in missing observations to equally space measurements

Unequal spacing between measurements

Solutions for unequally spaced measurements:

- ► AR models are discrete time models: *Continuous time models* can take the length of the time intervals into account.
- ► Ad hoc solution: add in missing observations to equally space measurements
  - TINTERVAL function in Mplus
  - r-package ...

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shaping tomorrow