

Pymor - Time average

Pavan

Time average

- Uses frequency string from table to determine time average function

- Time average methods:

- Instantaneous (`da.resample(...).first()`)
- Mean (`da.resample(...).mean()`)
- Climatology (`da.groupby(...).mean(dim='time')`)

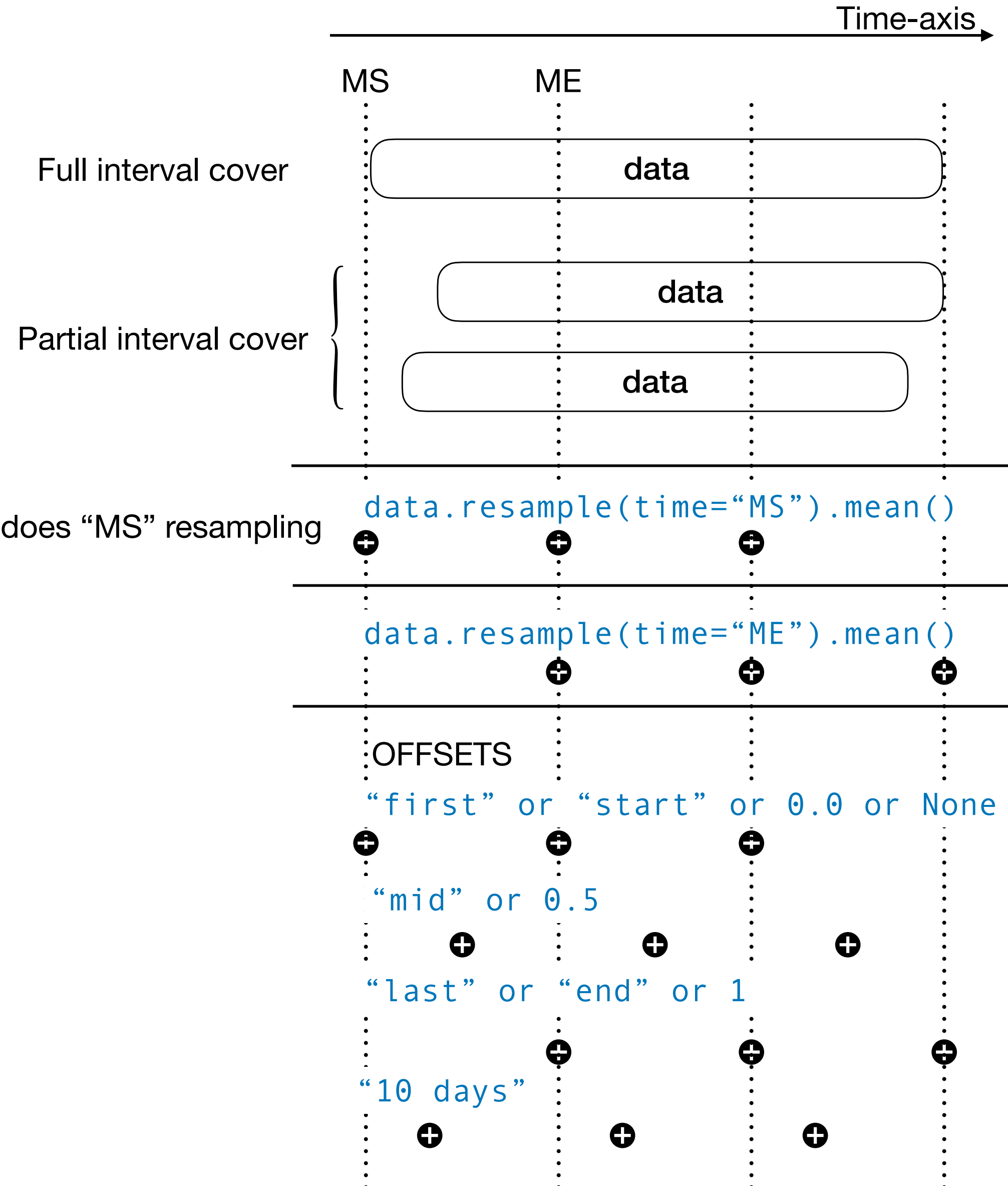
`Fx` is a special case. (`approx_interval = 0` or `None`)

```
"tas": {
  "frequency": "mon",
  "modeling_realm": "atmos",
  "standard_name": "air_temperature",
  "units": "K",
  "cell_methods": "area: time: mean",
  "cell_measures": "area: areacella",
  "long_name": "Near-Surface Air Temperature",
```

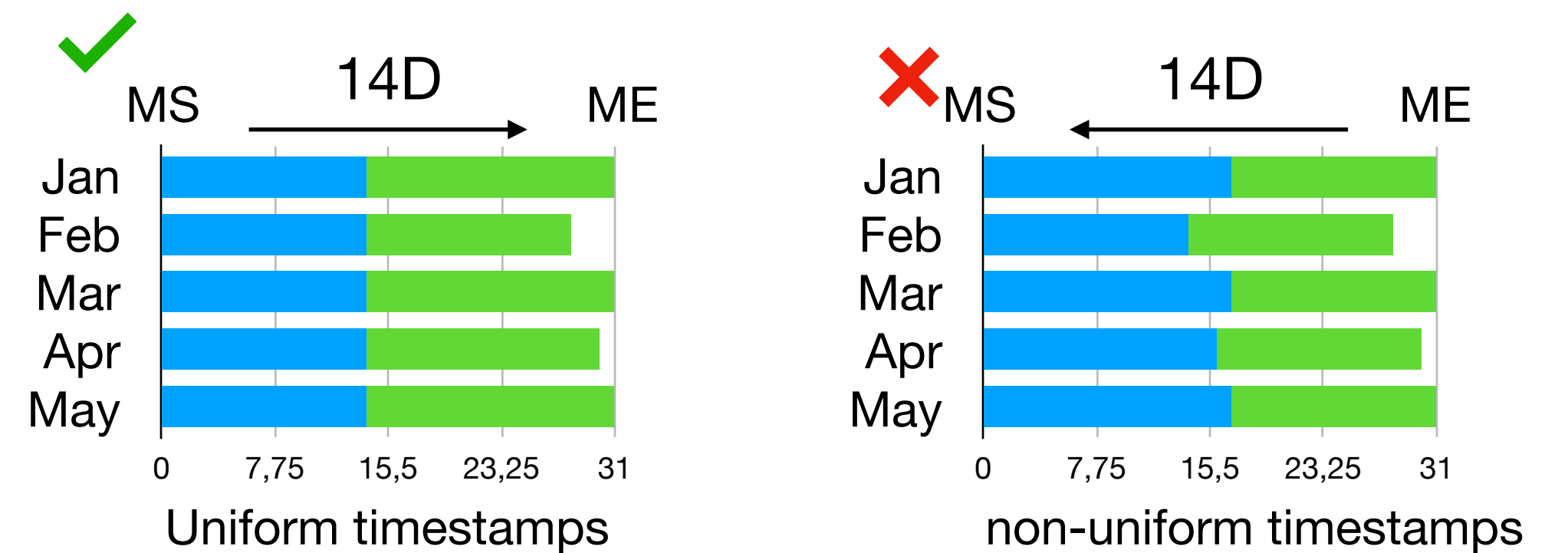
```
{
  "frequency":{
    "1hr":"sampled hourly",
    "1hrCM":"monthly-mean diurnal cycle resolving each day into 1-hour means",
    "1hrPt":"sampled hourly, at specified time point within an hour",
    "3hr":"3 hourly mean samples",
    "3hrPt":"sampled 3 hourly, at specified time point within the time period",
    "6hr":"6 hourly mean samples",
    "6hrPt":"sampled 6 hourly, at specified time point within the time period",
    "day":"daily mean samples",
    "dec":"decadal mean samples",
    "fx":"fixed (time invariant) field",
    "mon":"monthly mean samples",
    "monC":"monthly climatology computed from monthly mean samples",
    "monPt":"sampled monthly, at specified time point within the time period",
    "subhrPt":"sampled sub-hourly, at specified time point within an hour",
    "yr":"annual mean samples",
    "yrPt":"sampled yearly, at specified time point within the time period"
  },
```

Time average - Resampling

Monthly frequency



- Always does "month start" in monthly averaging
- Date offsets is possible using ``adjust_timestamp`` parameter
- Date offset options
 - ``first``, ``mid``, ``start``
 - 0.0 - 1.0
 - 14D (offset by days)
- Date offset are w.r.t to MS



Time average

Q: If source data is already at monthly frequency, is time-averaging step needed in the pipeline when targeting monthly table?

A: Not really. If it is included then the frequency of output data is the same but the time-stamps get adjusted to Month-Start interval.