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MOSAIK Summer Scenarios

```
In [1]: %matplotlib inline
from scenariotk import Scenario, diurnal_cycle, load_cosmo_data, plot_panel
from scenariotk import SCHOENEFELD, FUHLBUETTEL, ECHTERDINGEN
```

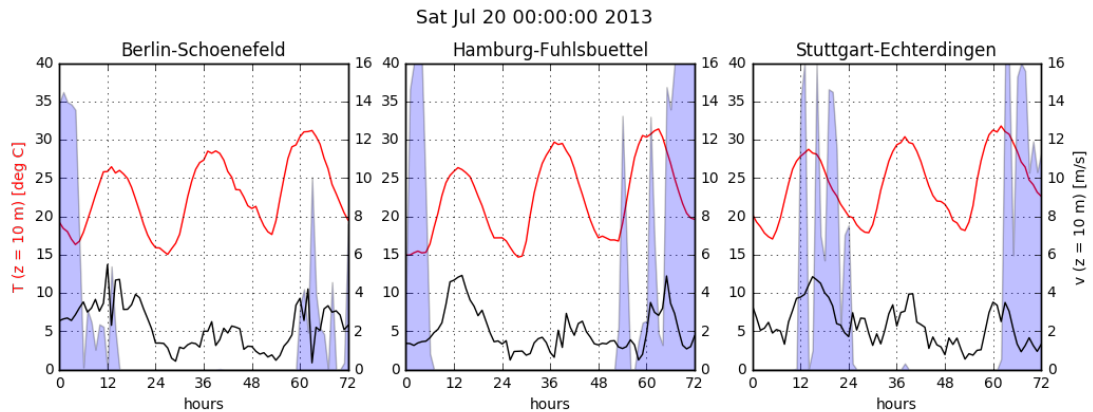
```
In [2]: # Create list of the democities (i.e. list of objects providing the respective coordinates)
democities = [SCHOENEFELD, FUHLBUETTEL, ECHTERDINGEN]
```

```
# Create scenarios
jul2013 = Scenario('2013072000', '2013072300', \
                  '/data/ekadasch/scenario-data/summer/20130720')
aug2013 = Scenario('2013080100', '2013080400', \
                  '/data/ekadasch/scenario-data/summer/20130801')
aug2016alt = Scenario('2016082300', '2016082800', \
                     '/data/ekadasch/scenario-data/summer/20160823')
```

```
Scenario [2013072000 - 2013072300] created successfully
Scenario [2013080100 - 2013080400] created successfully
Scenario [2016082300 - 2016082800] created successfully
```

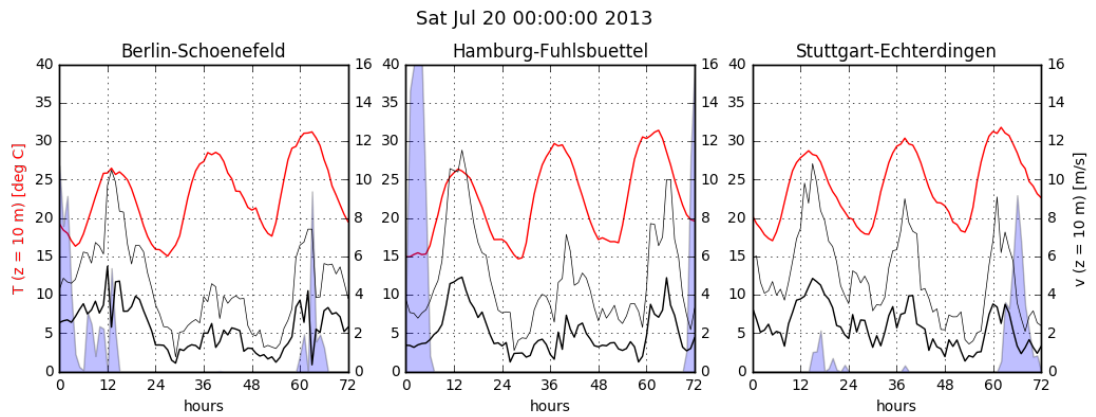
20. - 22. Juli 2013

```
In [3]: diurnal_cycle(jul2013, democities);
```



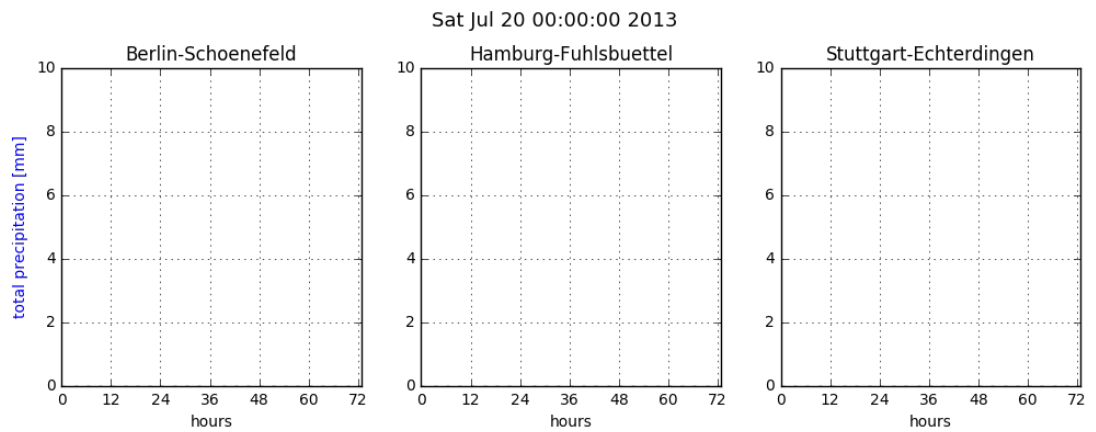
Legend: 2m temperature (red), 10m instantaneous wind (black), and total cloud cover (blue shading)

```
In [4]: diurnal_cycle(jul2013, democities, plot_vmax=True, low_and_medium_clc=True);
```

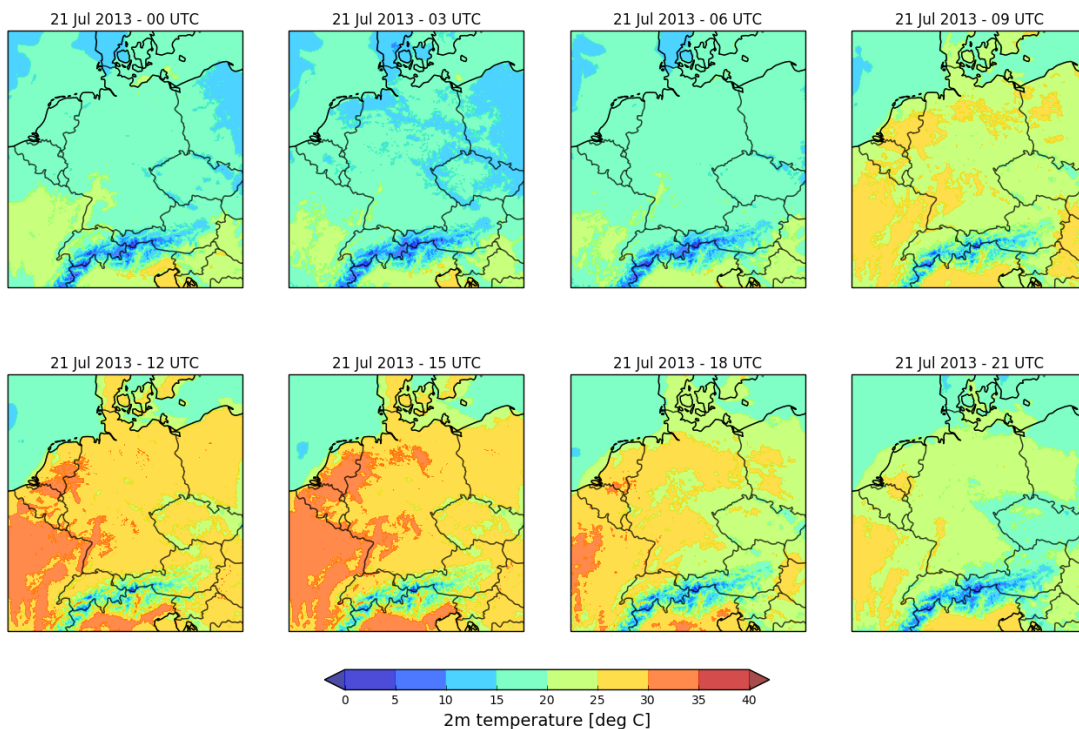


Legend: As above but with the maximum of low and medium cloud cover (blue shading) and 1h gusts (thin black lines)

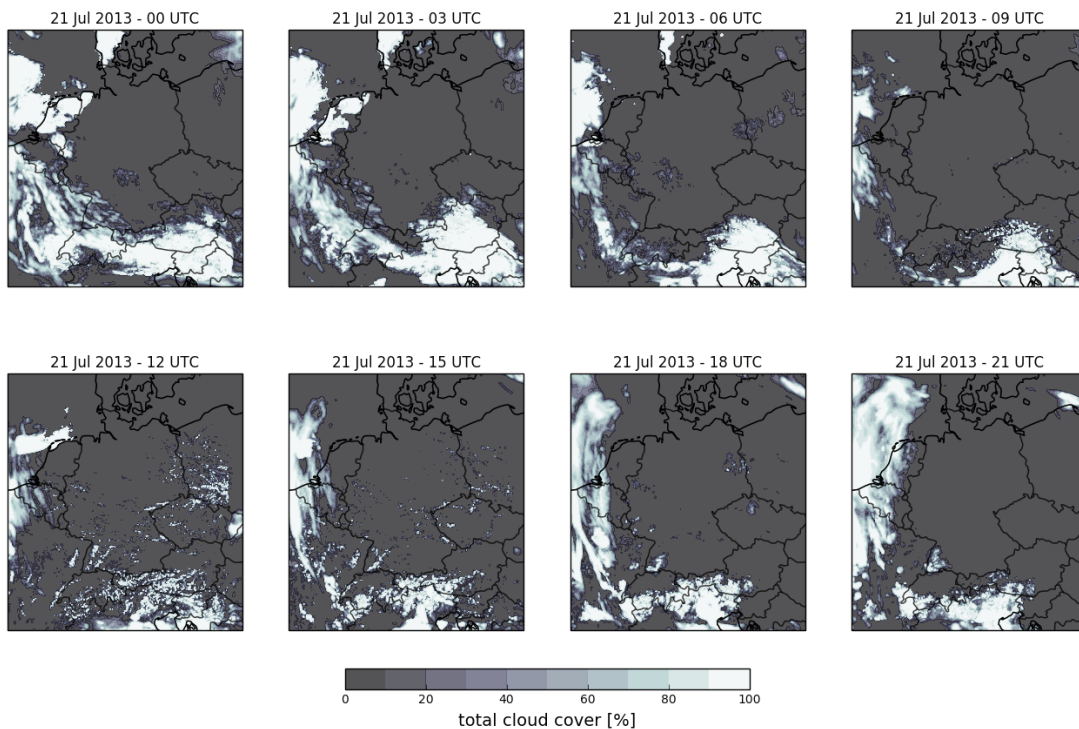
```
In [5]: diurnal_cycle(jul2013, democities, only_precip=True);
```



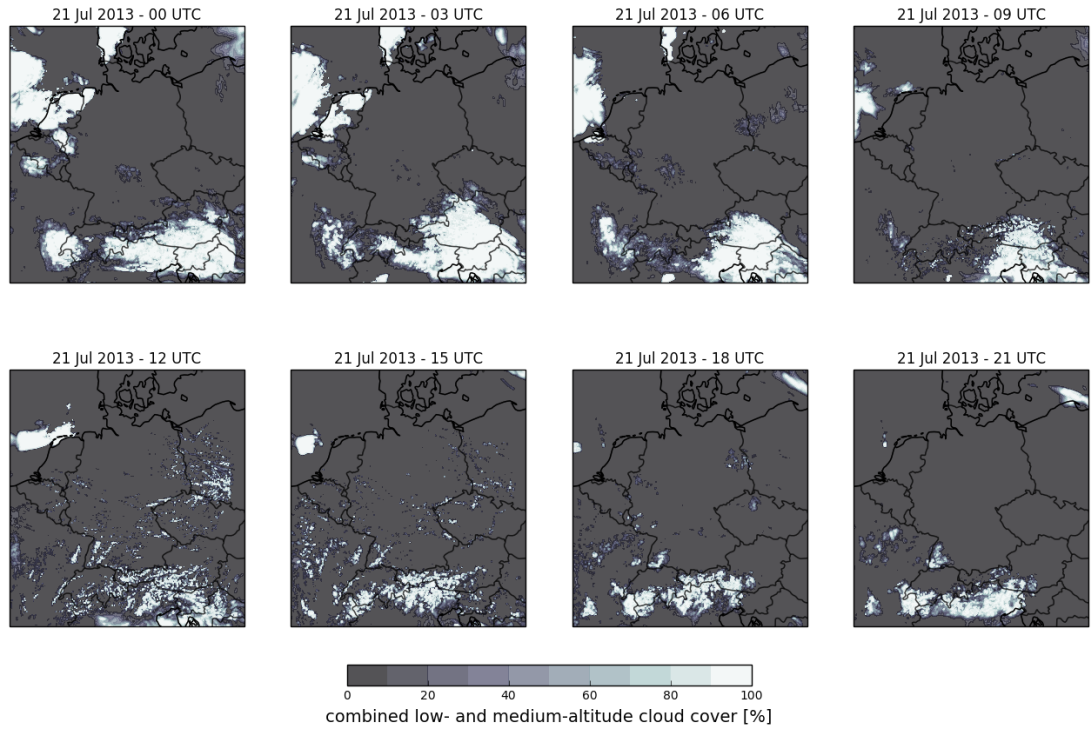
```
In [6]: cosmo_data_package = load_cosmo_data(jul2013)  
plot_panel(cosmo_data_package, var='t2m', start=24, end=48)
```



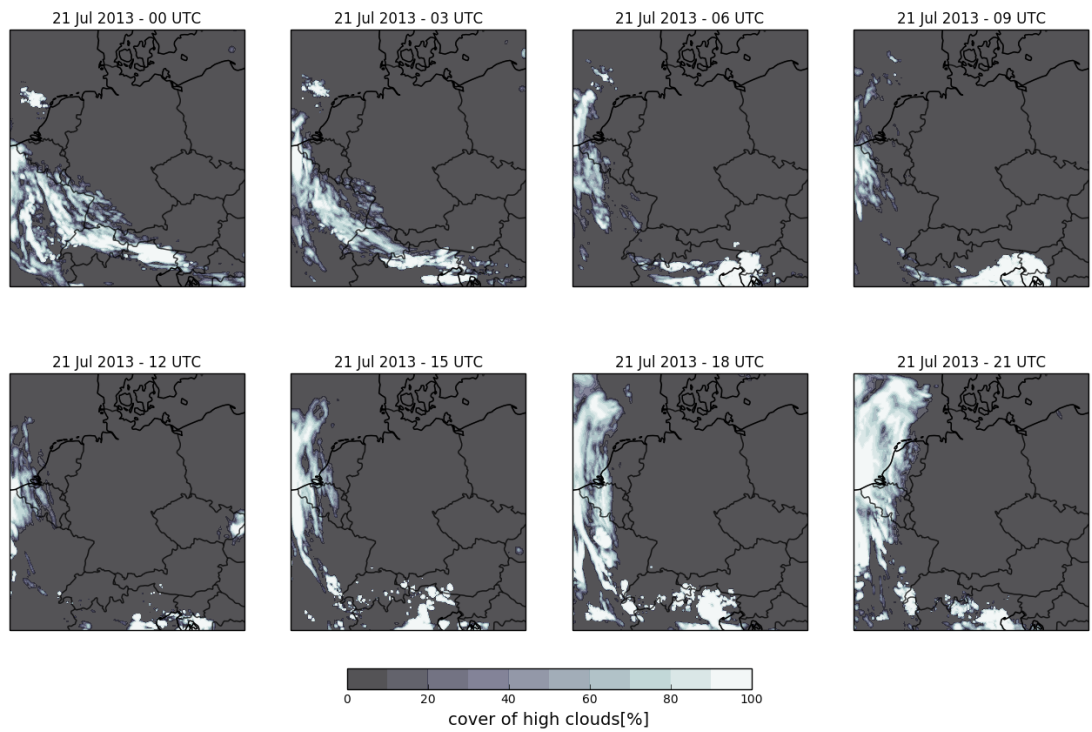
```
In [7]: plot_panel(cosmo_data_package, var='clct', start=24, end=48)
```



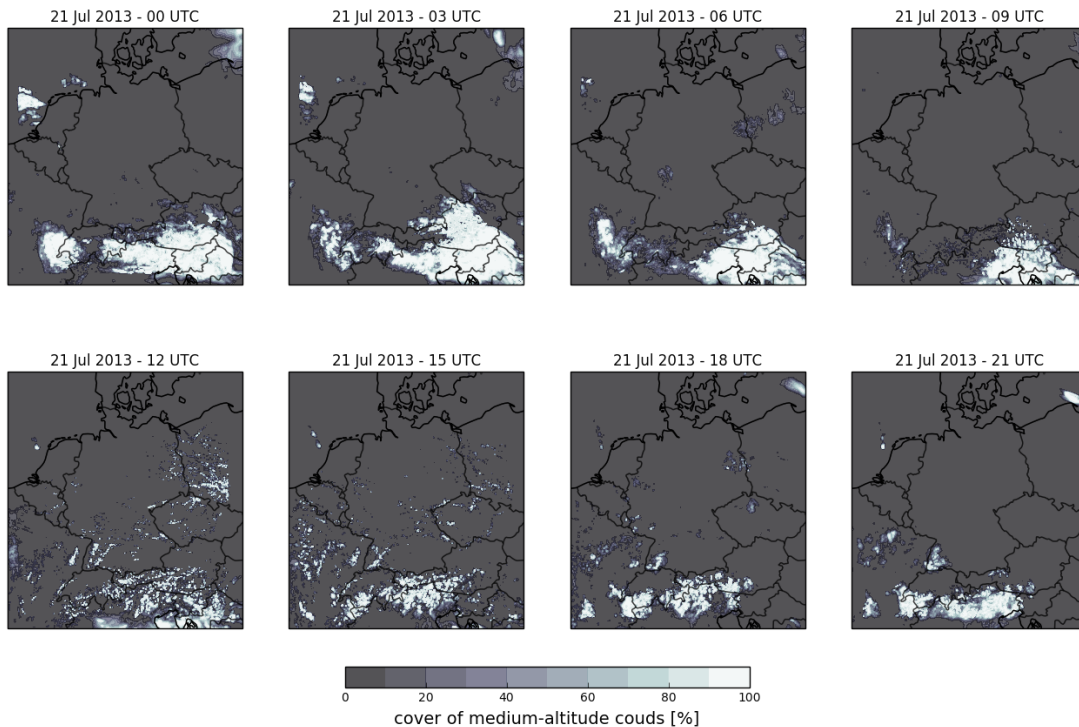
```
In [8]: plot_panel(cosmo_data_package, var='clcc', start=24, end=48)
```



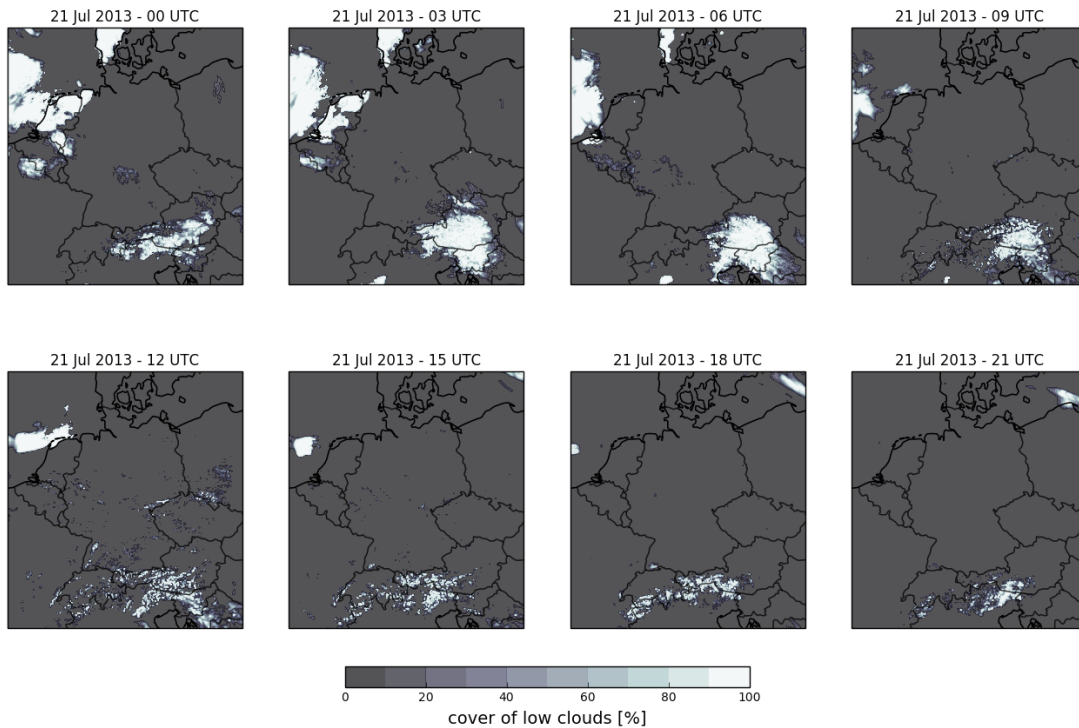
```
In [9]: plot_panel(cosmo_data_package, var='clch', start=24, end=48)
```



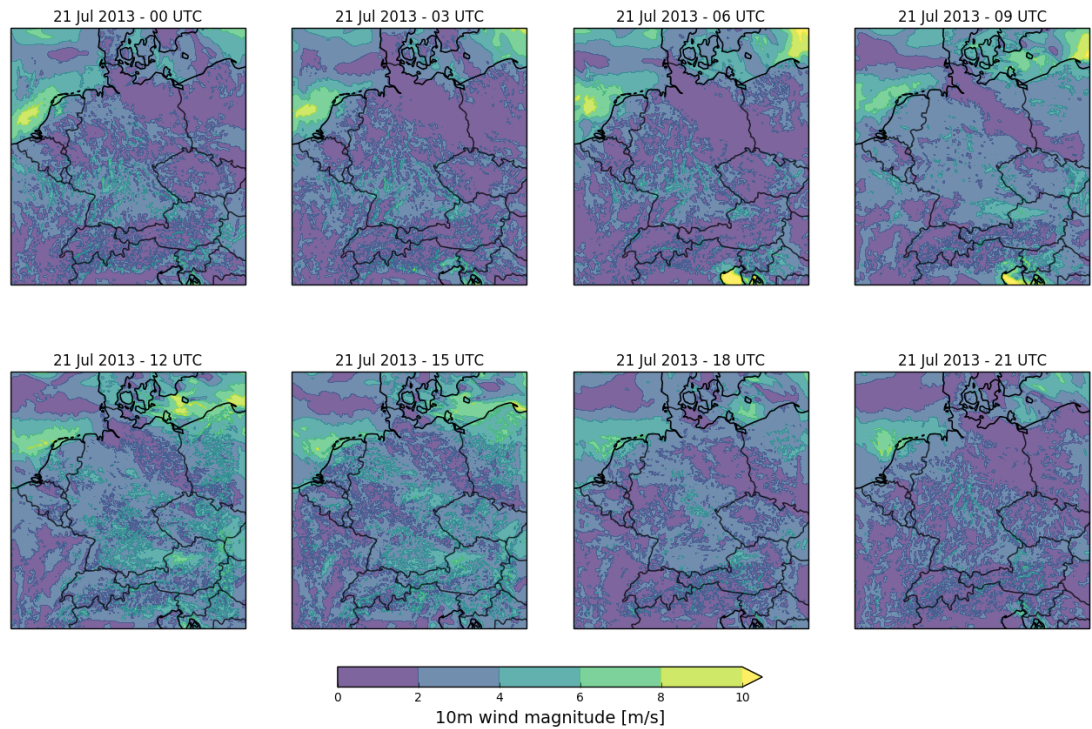
```
In [10]: plot_panel(cosmo_data_package, var='clcm', start=24, end=48)
```



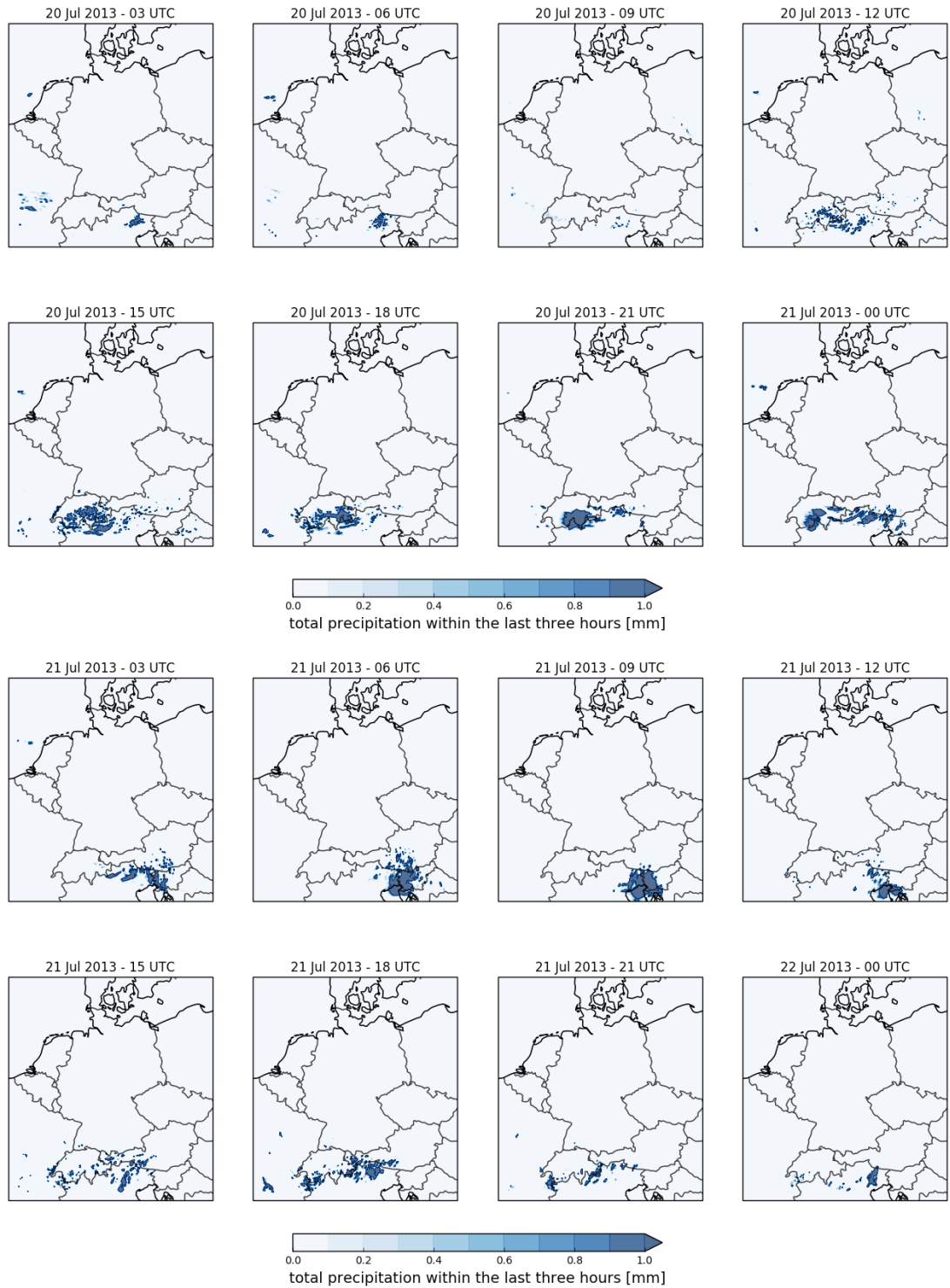
```
In [11]: plot_panel(cosmo_data_package, var='clcl', start=24, end=48)
```

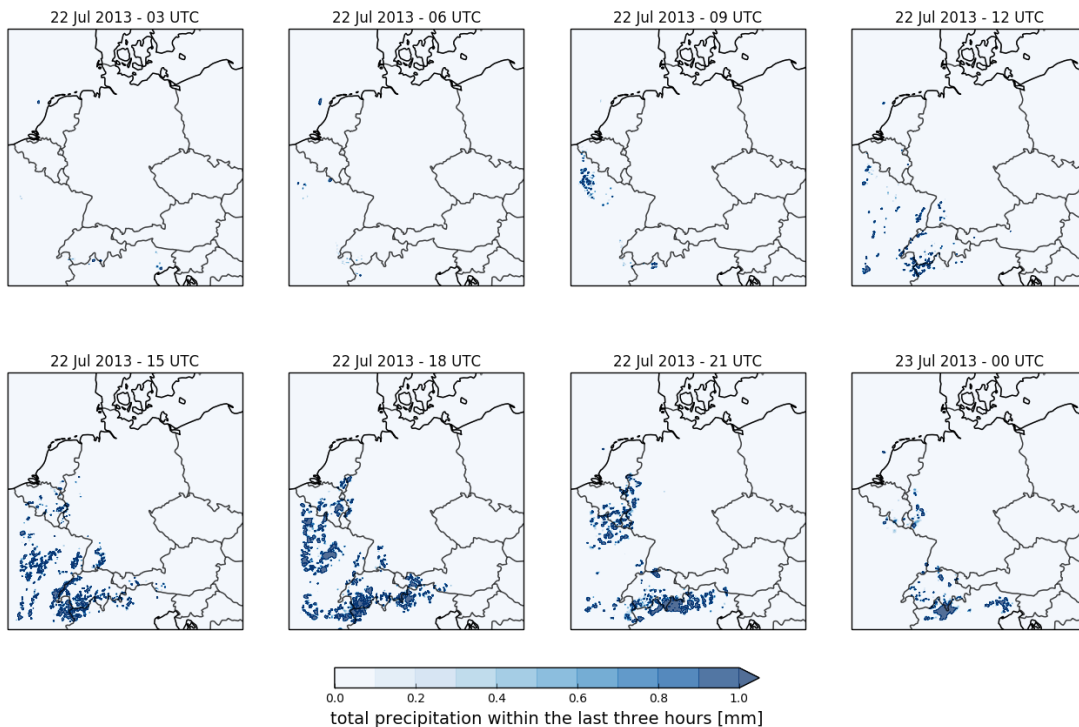


```
In [12]: plot_panel(cosmo_data_package, var='v 10m', start=24, end=48)
```



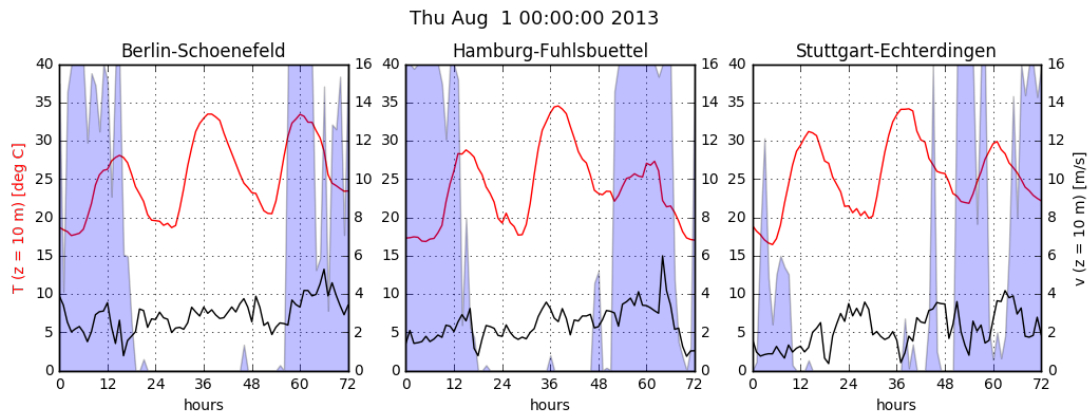
```
In [13]: for start in (0+3, 24+3, 48+3):  
         plot_panel(cosmo_data_package, var='tot_prec', start=start, end=start +  
         24)
```





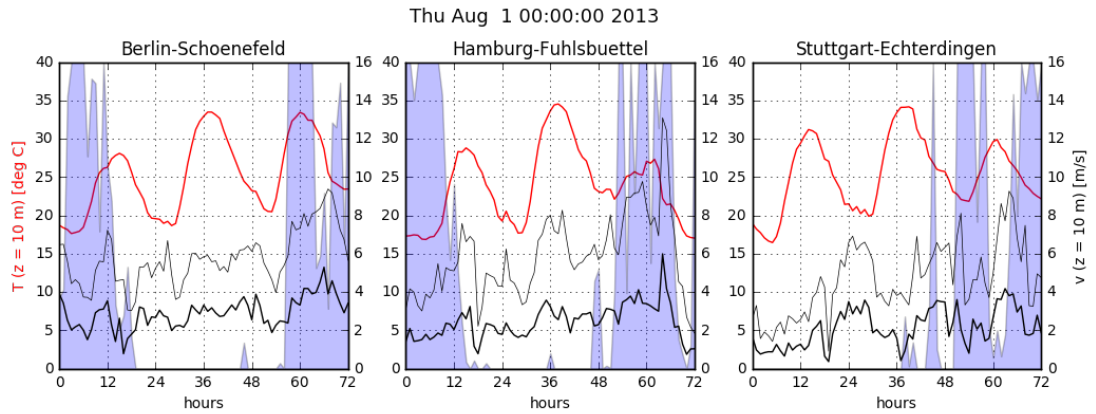
1.-3. August 2013

In [14]: `diurnal_cycle(aug2013, democities)`



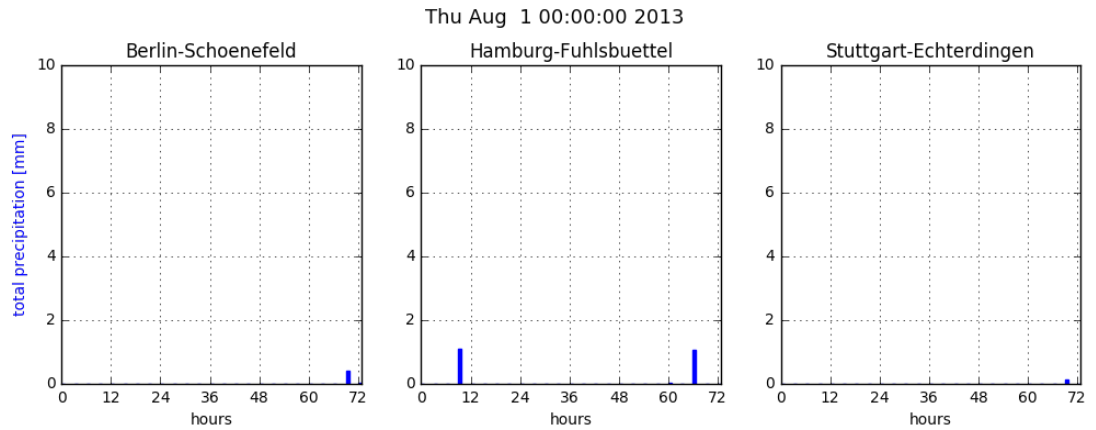
Legend: 2m temperature (red), 10m instantaneous wind (black), and total cloud cover (blue shading)

```
In [15]: diurnal_cycle(aug2013, democities, plot_vmax=True, low_and_medium_clc=True)
```

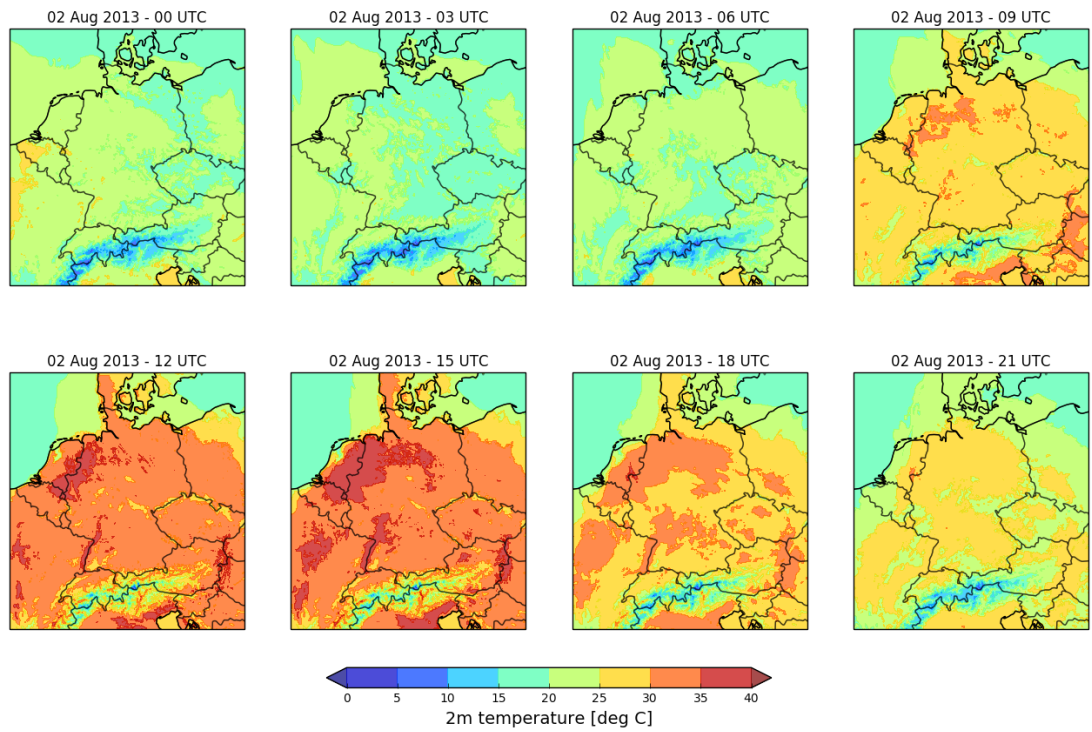


Legend: As above but with the maximum of low and medium cloud cover (blue shading) and 1h gusts (thin black lines)

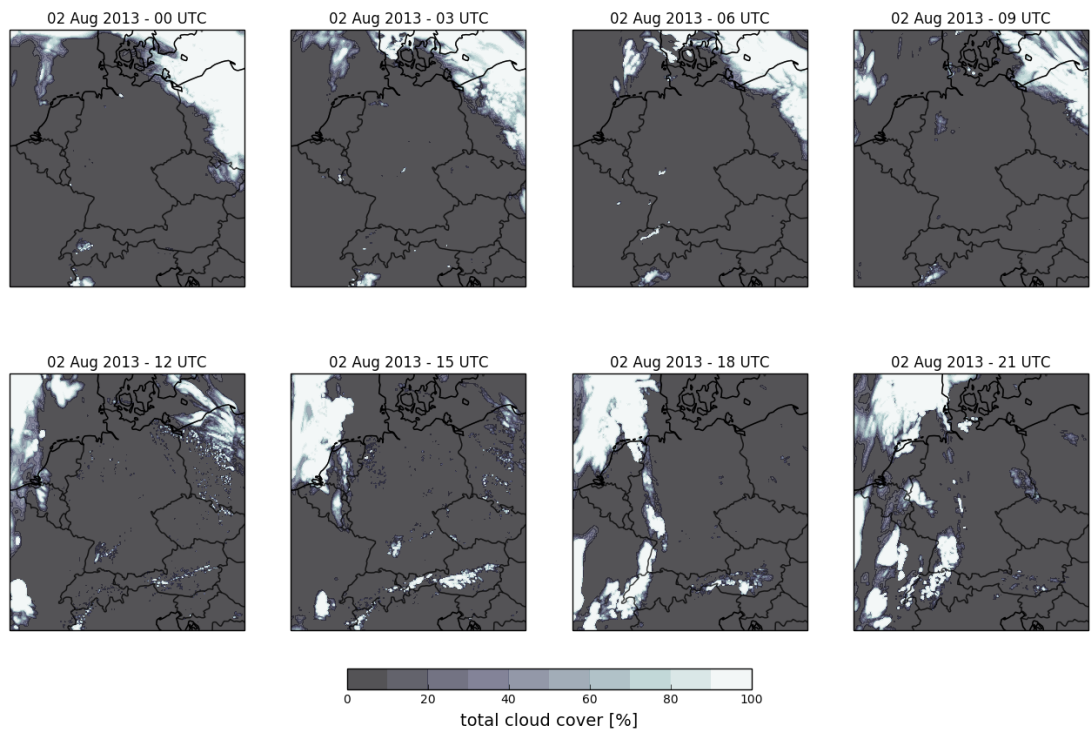
```
In [16]: diurnal_cycle(aug2013, democities, only_precip=True);
```



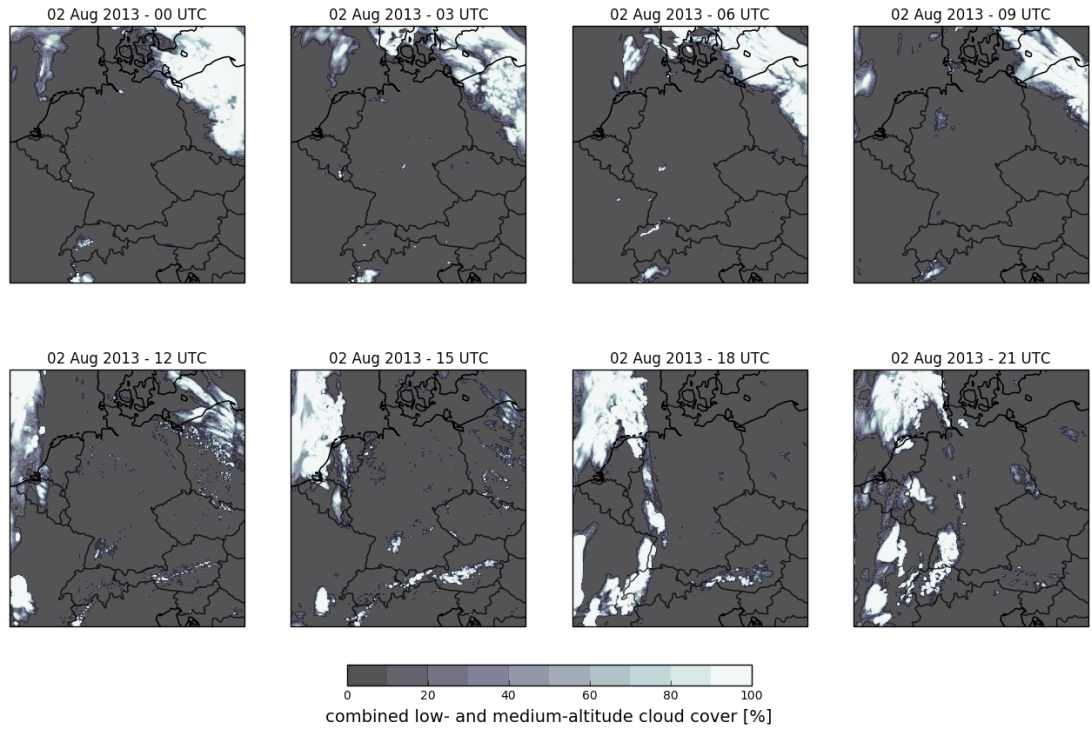
```
In [17]: cosmo_data_package = load_cosmo_data(aug2013)
plot_panel(cosmo_data_package, var='t2m', start=24, end=48)
```



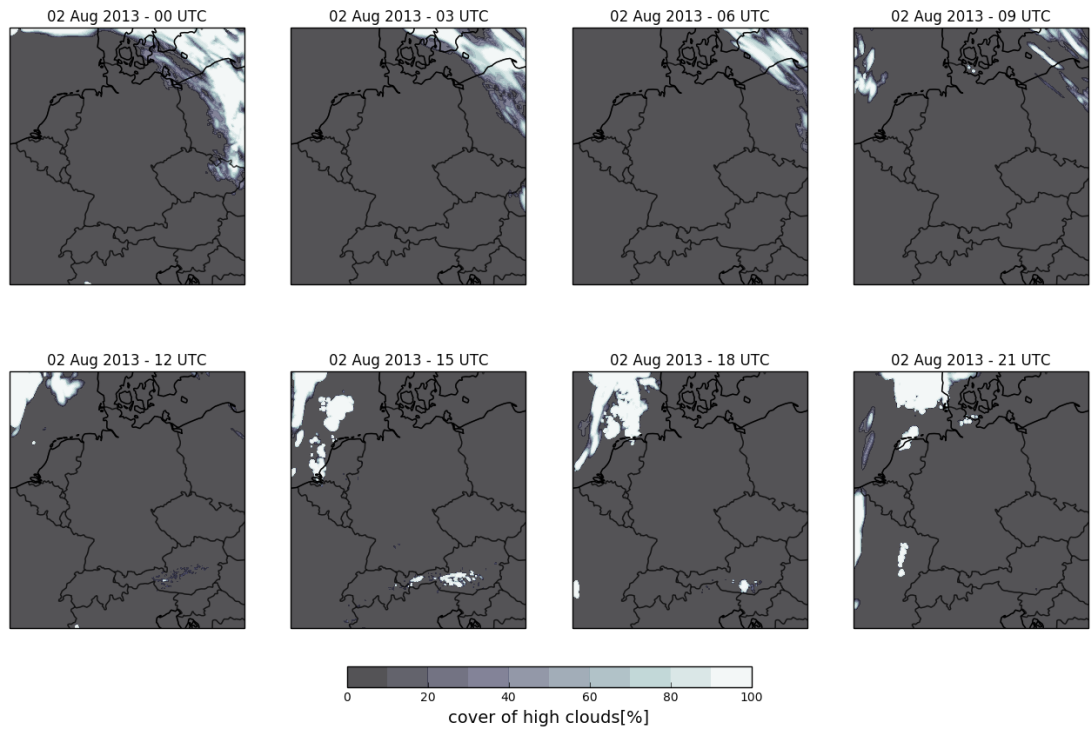
```
In [18]: plot_panel(cosmo_data_package, var='clct', start=24, end=48)
```



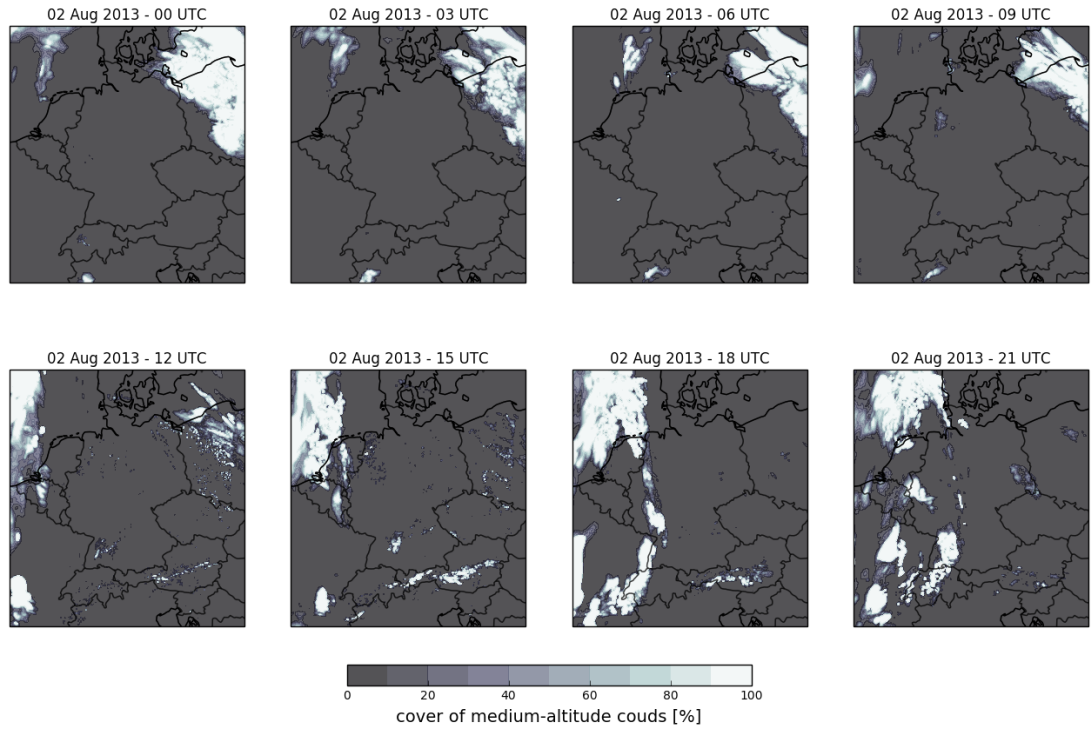
```
In [19]: plot_panel(cosmo_data_package, var='clcc', start=24, end=48)
```



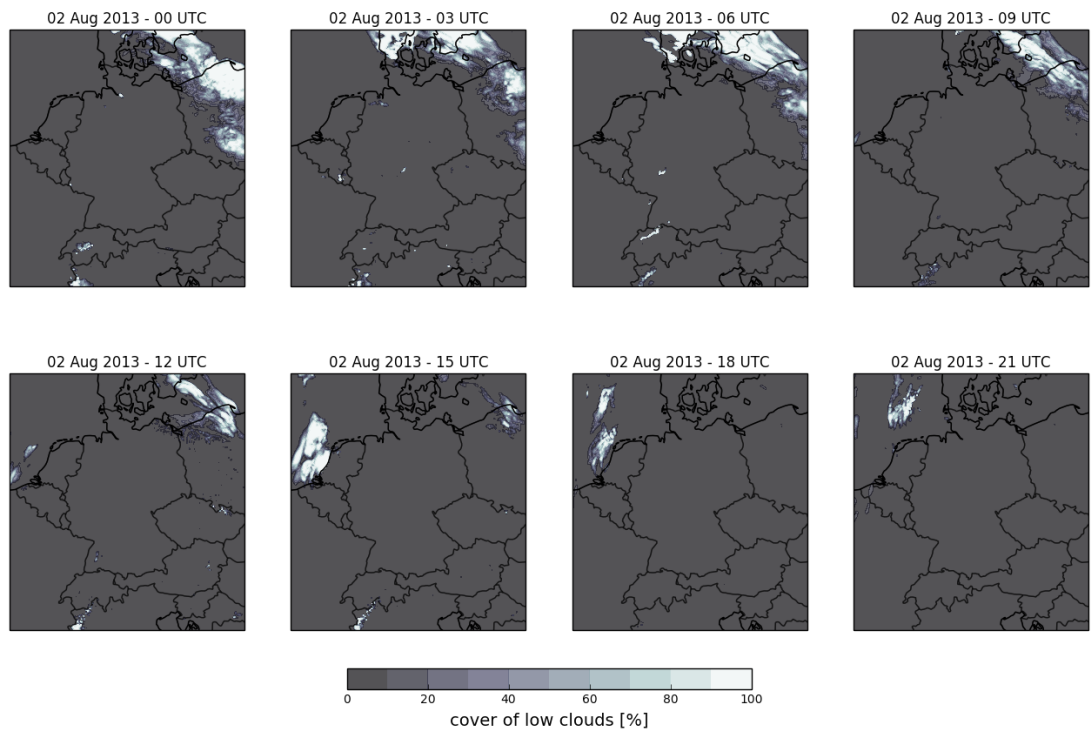
```
In [20]: plot_panel(cosmo_data_package, var='clch', start=24, end=48)
```



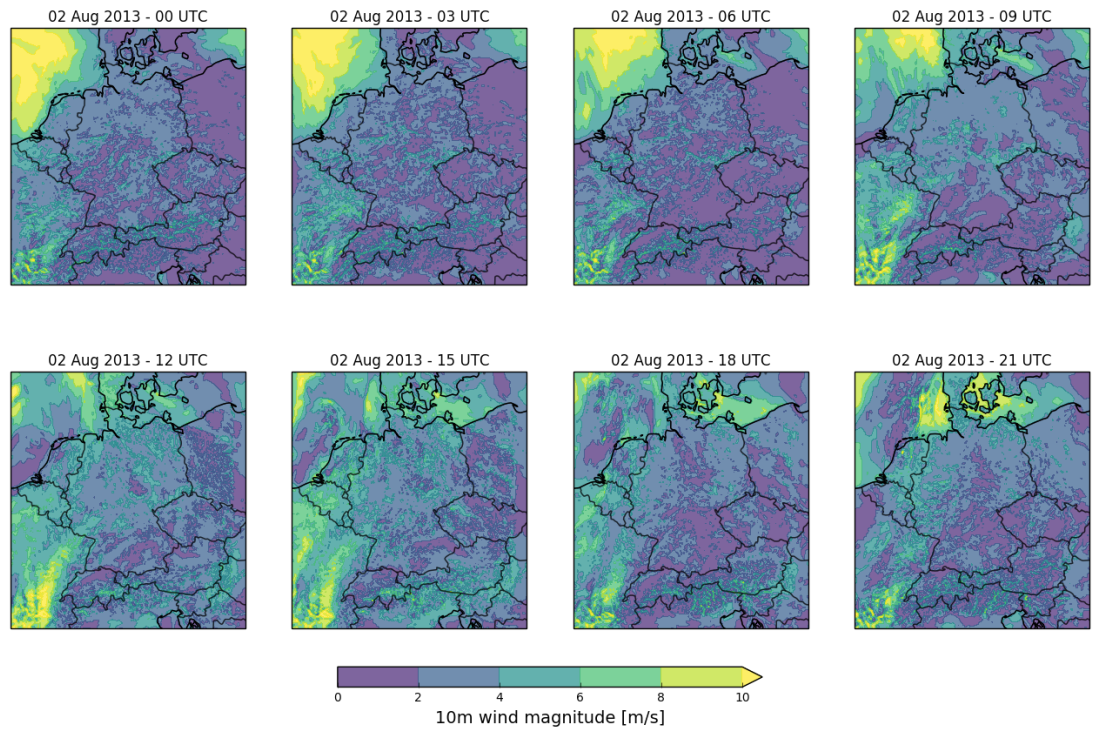
```
In [21]: plot_panel(cosmo_data_package, var='clcm', start=24, end=48)
```



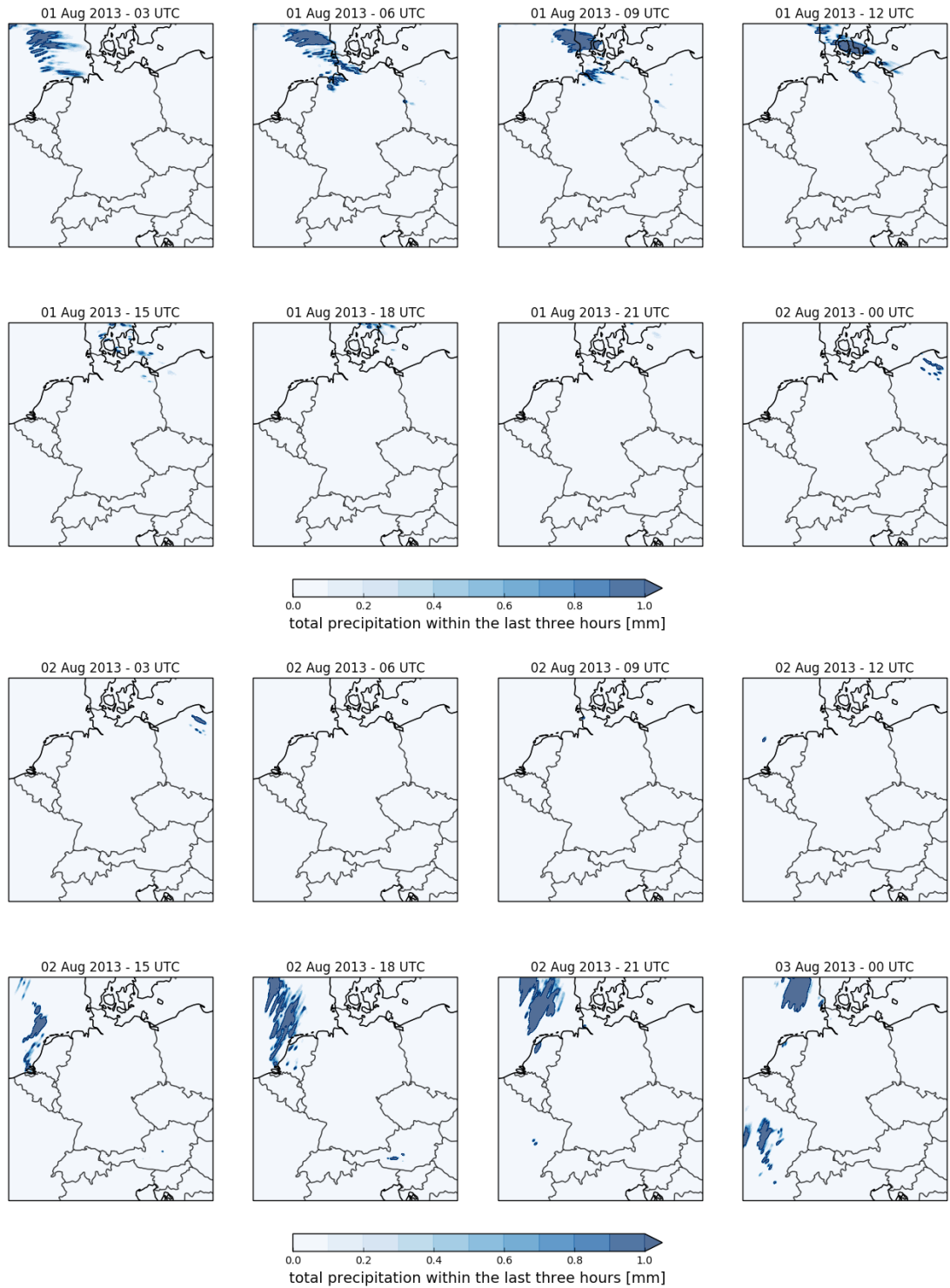
```
In [22]: plot_panel(cosmo_data_package, var='clcl', start=24, end=48)
```

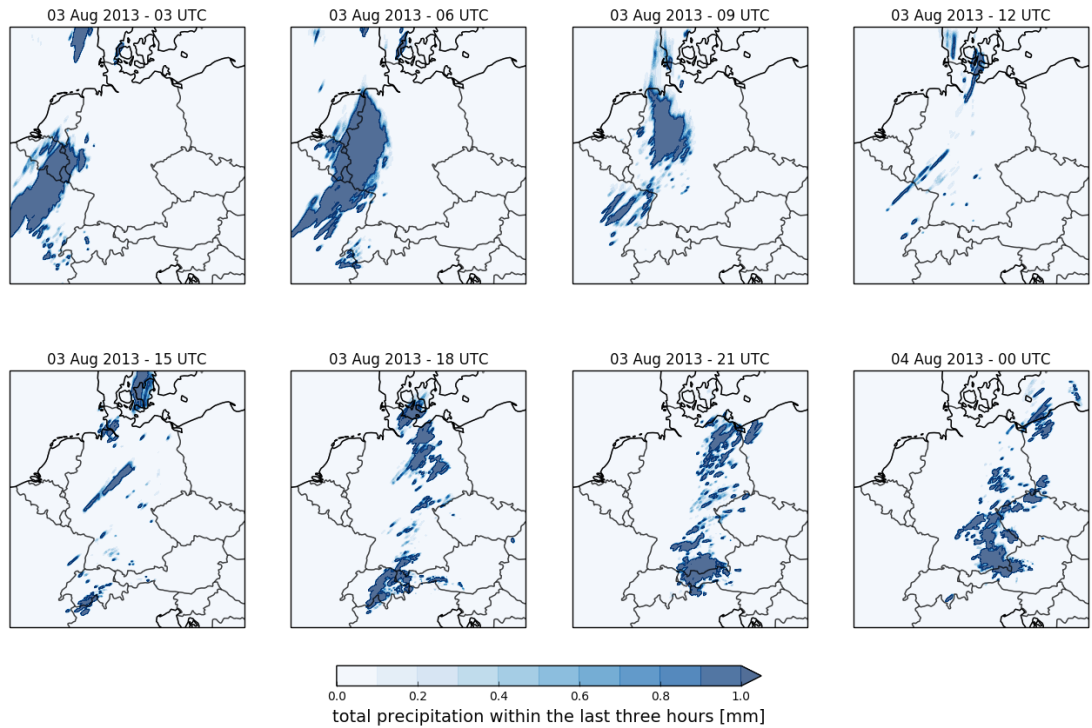


```
In [23]: plot_panel(cosmo_data_package, var='v 10m', start=24, end=48)
```



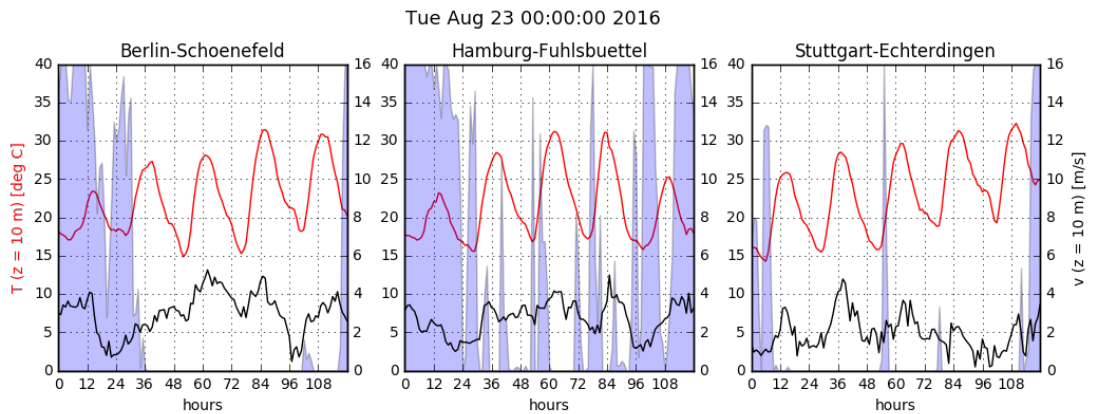
```
In [24]: for start in (0+3, 24+3, 48+3):  
         plot_panel(cosmo_data_package, var='tot_prec', start=start, end=start+2  
         4)
```





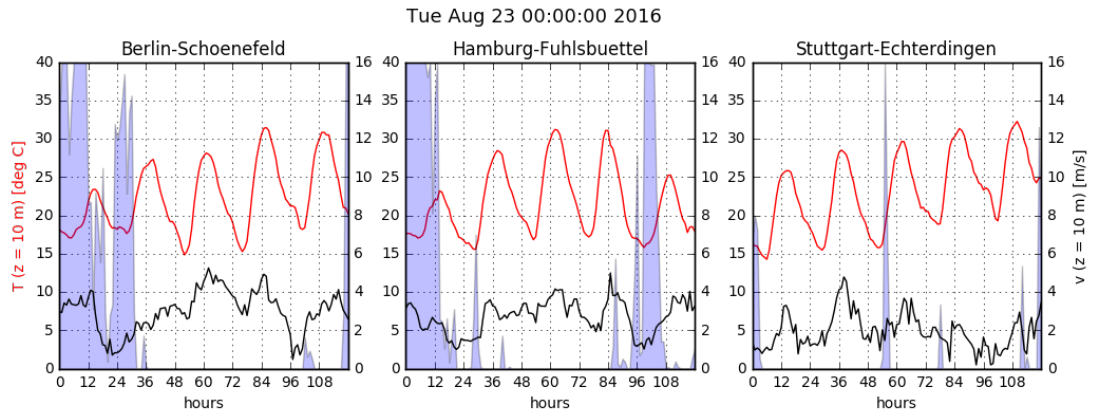
23. - 27. August 2016

In [25]: `diurnal_cycle(aug2016alt, democities)`



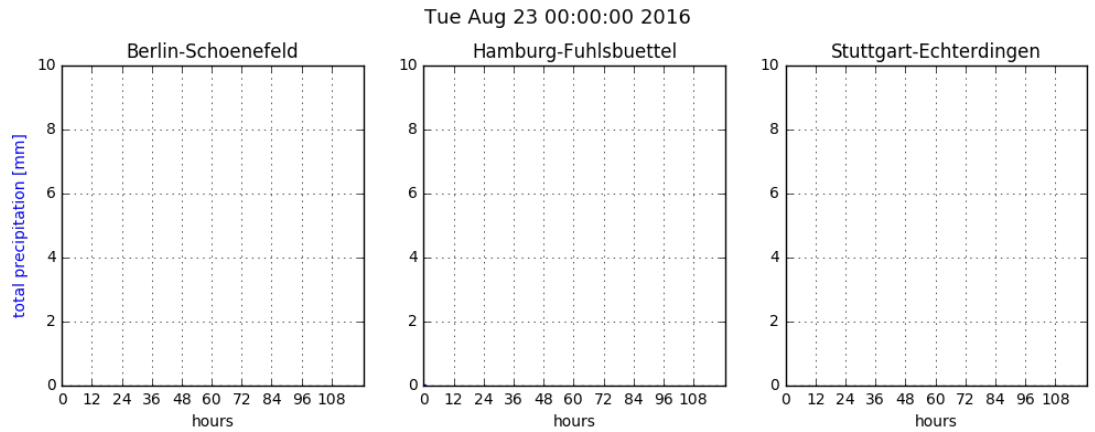
Legend: 2m temperature (red), 10m instantaneous wind (black), and total cloud cover (blue shading)

```
In [26]: diurnal_cycle(aug2016alt, democities, low_and_medium_clc=True)
```

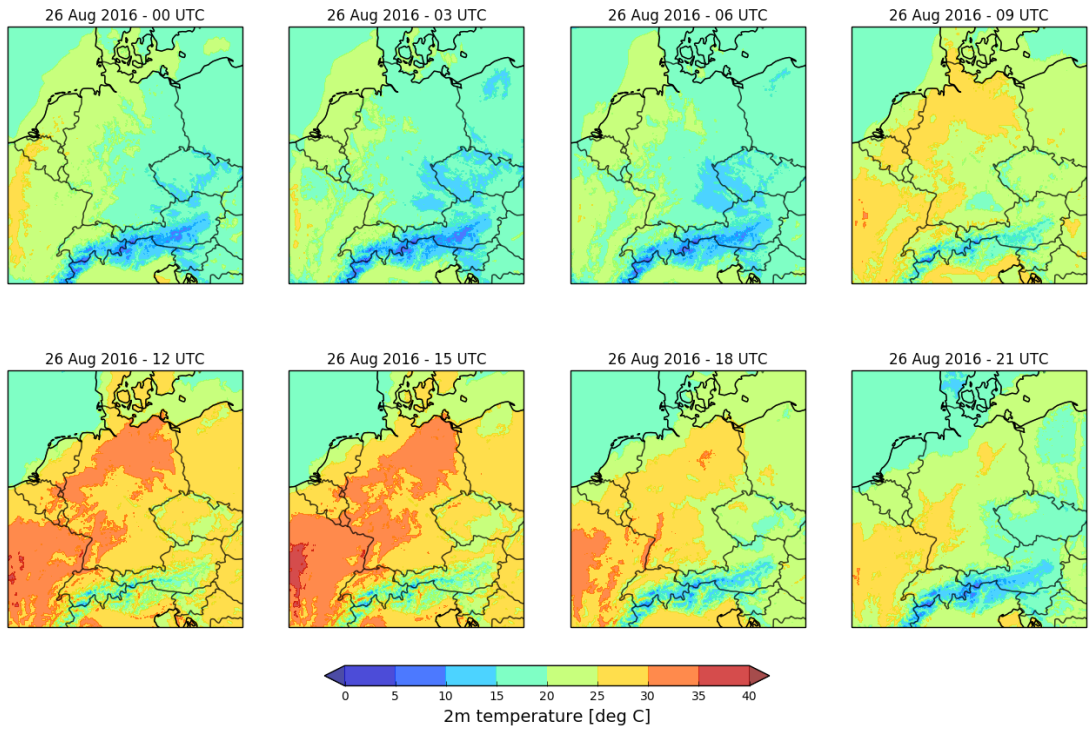


Legend: As above but with the maximum of low and medium cloud cover (blue shading) and 1h gusts (thin black lines)

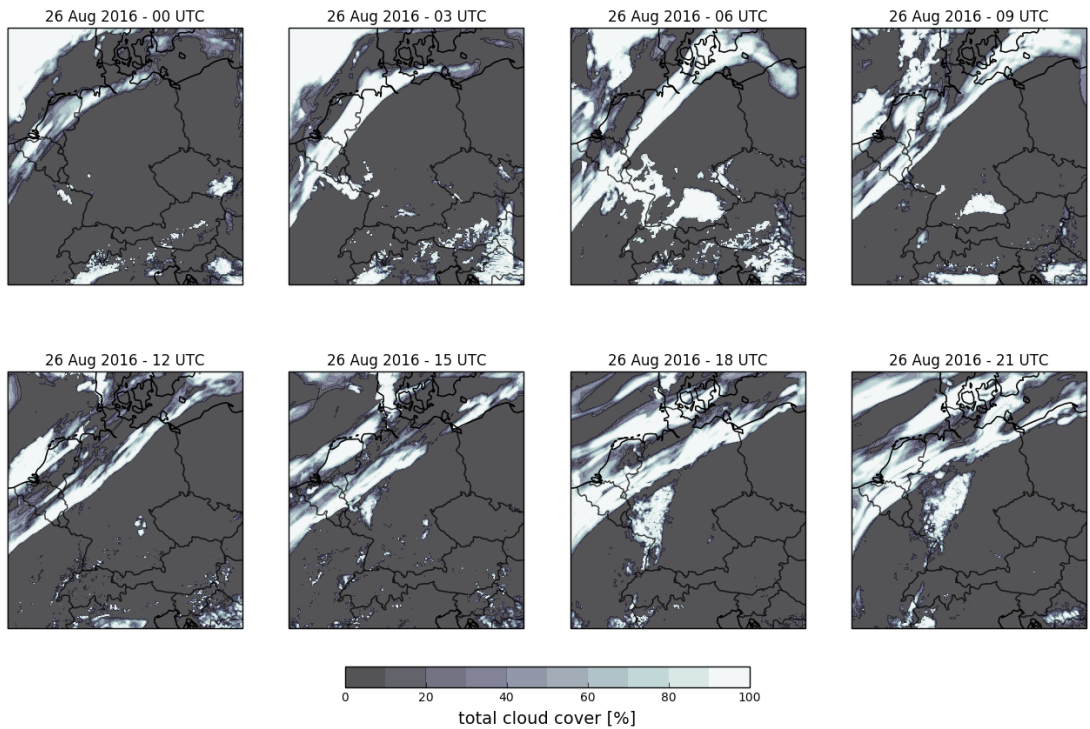
```
In [27]: diurnal_cycle(aug2016alt, democities, plot_vmax=True, only_precip=True);
```



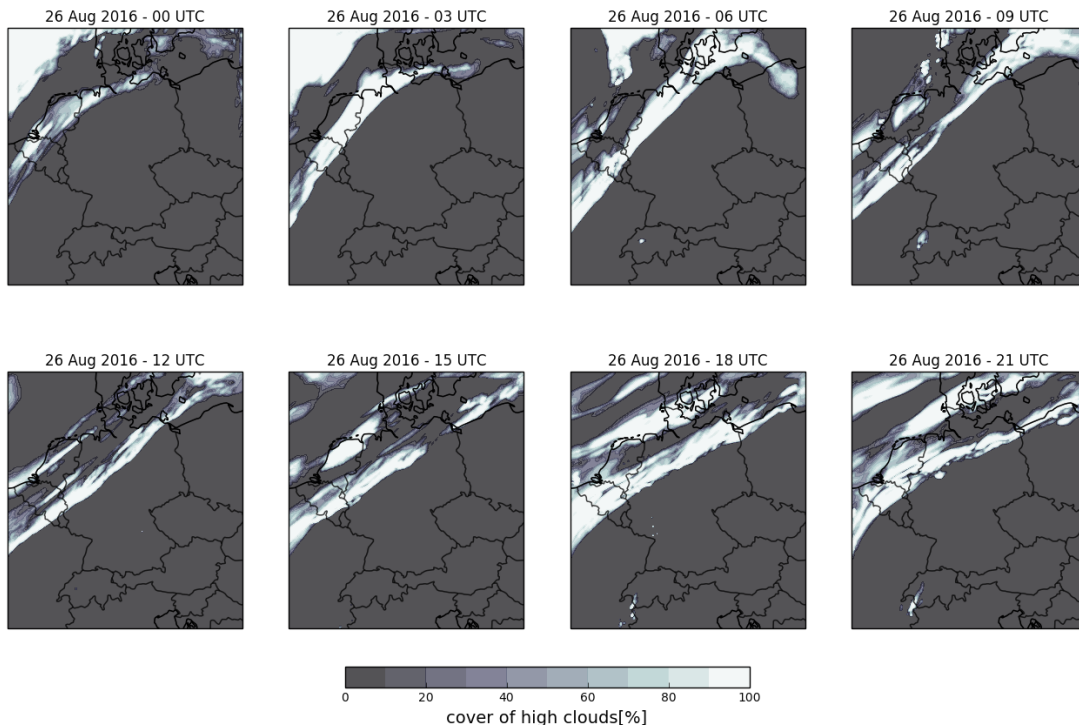
```
In [28]: cosmo_data_package = load_cosmo_data(aug2016alt)  
plot_panel(cosmo_data_package, var='t2m', start=72, end=96)
```



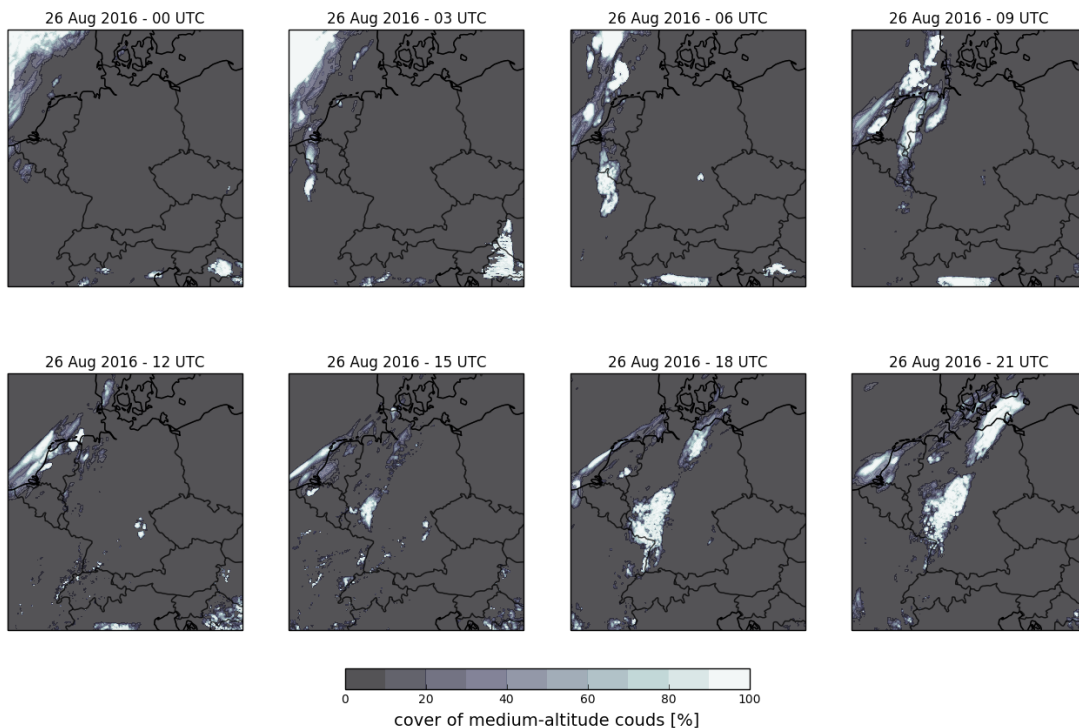
```
In [29]: plot_panel(cosmo_data_package, var='clct', start=72, end=96)
```



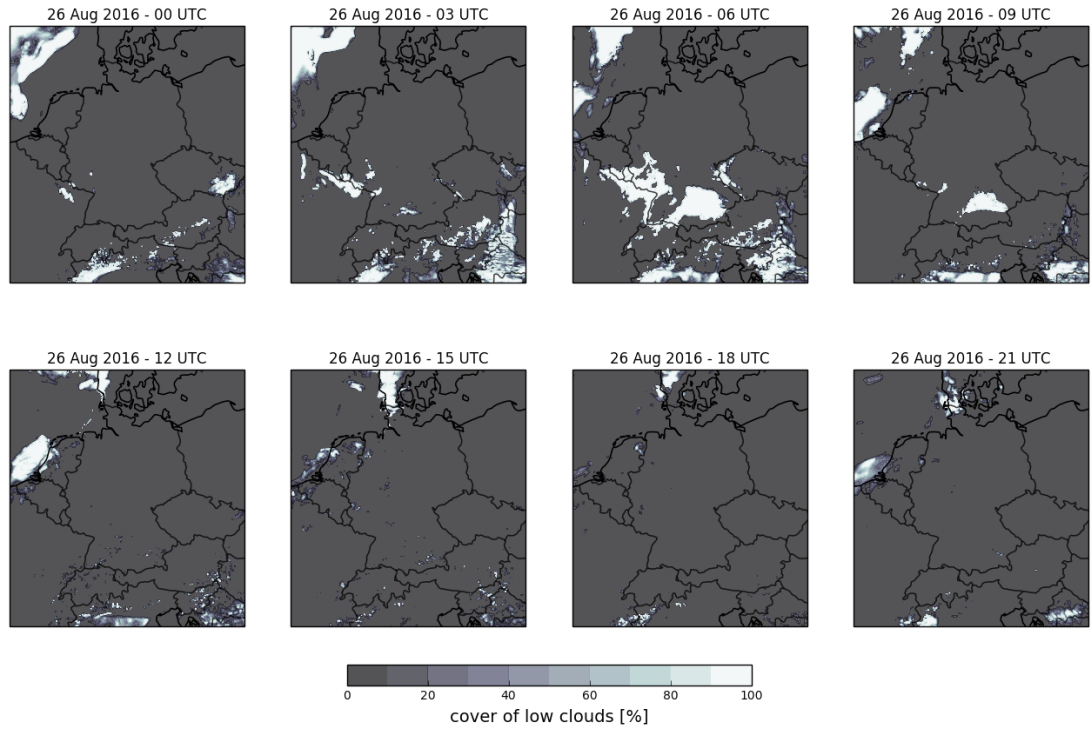
```
In [30]: plot_panel(cosmo_data_package, var='clch', start=72, end=96)
```



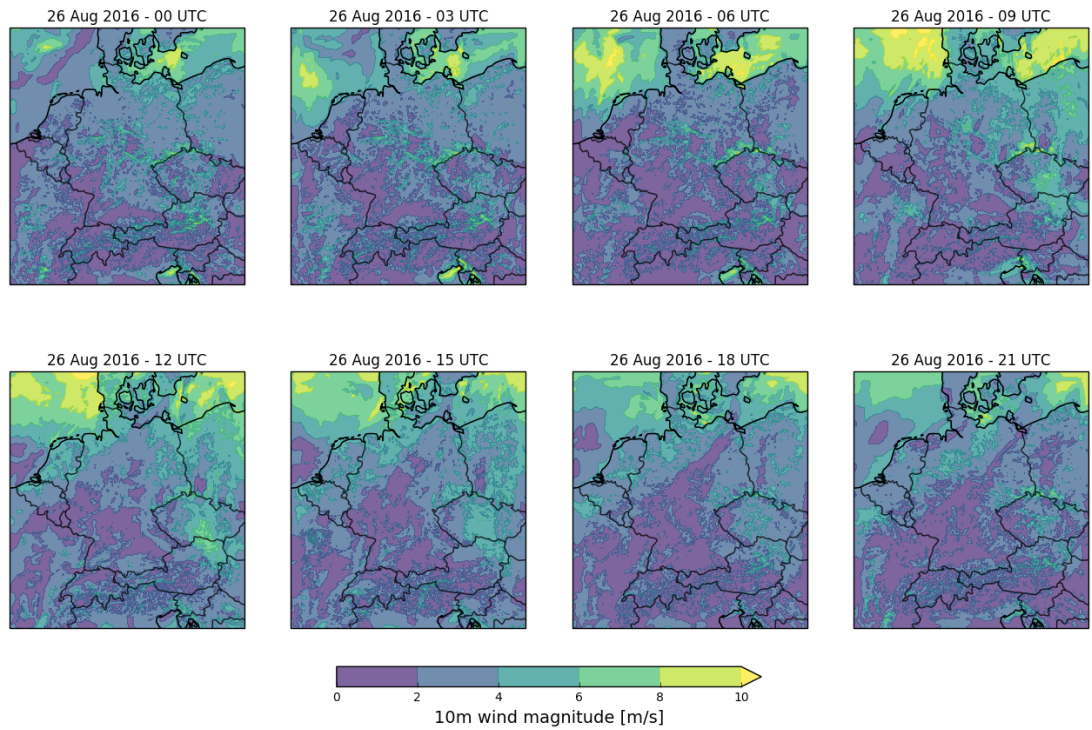
```
In [31]: plot_panel(cosmo_data_package, var='clcm', start=72, end=96)
```



```
In [32]: plot_panel(cosmo_data_package, var='clcl', start=72, end=96)
```



```
In [33]: plot_panel(cosmo_data_package, var='v 10m', start=72, end=96)
```



```
In [34]: for start in (0+3, 24+3, 48+3, 72+3, 96+3):  
         plot_panel(cosmo_data_package, var='tot_prec', start=start, end=start+24  
         )
```

