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# Spatial distribution and features of genesis of mesoscale convective complexes over the south-east of Western Siberia.

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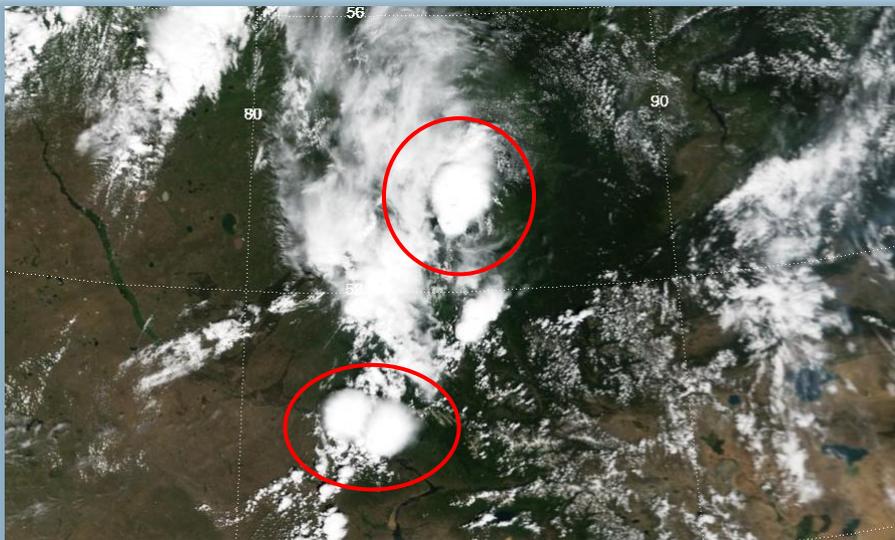
# Interpretation mesoscale convective complexes(MCC)



Image in the visible light spectrum of the MODIS KA Terra for June 22, 2017, flyover time 05:45 UTC.

Selection criteria:

$CTT \leq 200$ K (-32 ºC)

$COT \leq 30$
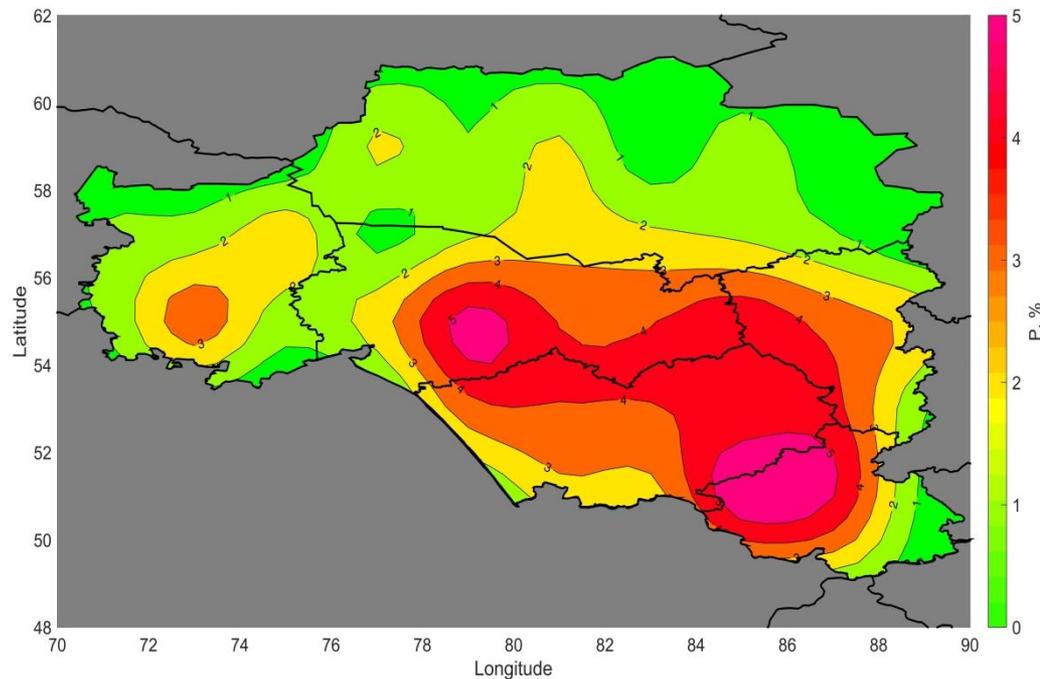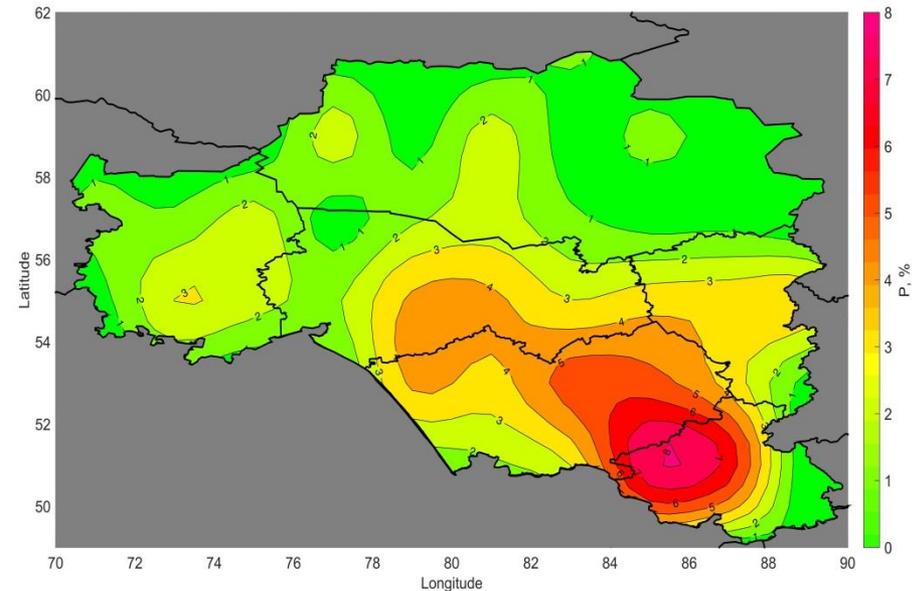
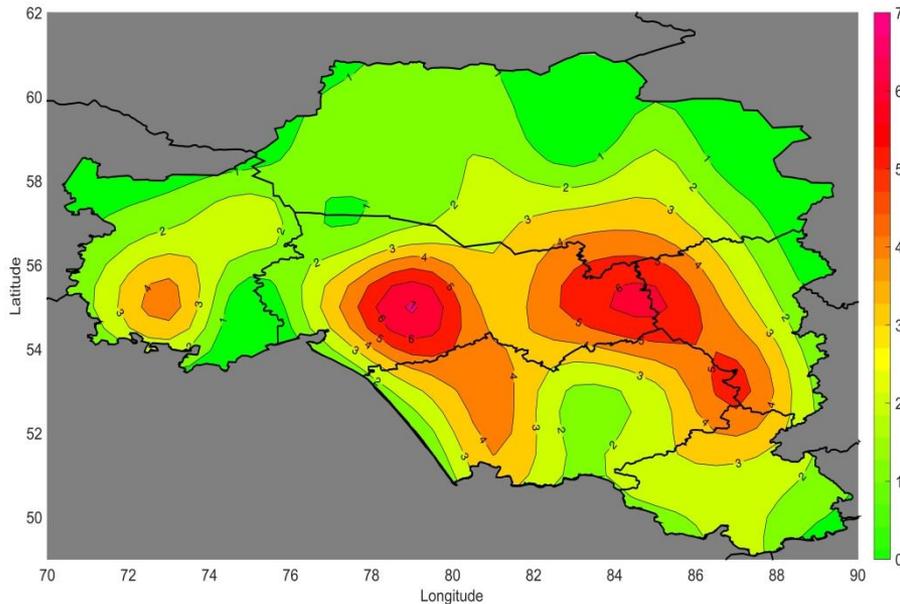$S \geq 5000$ km$^2$; $S \geq 10^4$ km$^2$

For 2010-2019 years fixed:

279 cases        91 case

# Localization MCC



Smoothed distribution of the frequency of occurrence of all MCC cases in the southeast of Western Siberia.

# Localization MCC



Smoothed distribution of MCC frequency of frontal (a) and airmass (b) origin in the southeast of Western Siberia.

# Estimation of morphological characteristics of MCC and microphysical

| | S, $\times 10^3$ km² | Cloud Top Height , km | Cloud Water Path , kg/m² | Cloud Effective Radius , mkm |
|---|---|---|---|---|
| All MCC cases | 5,2/8,3/17,1 | 9,2/10,6/12,1 | 1,0/1,3/1,5 | 23/26/29 |
| Frontal MCC | 5,3/9,2/18,4 | 9,3/10,6/12,0 | 1,0/1,3/1,5 | 22/26/29 |
| Airmass MCC | 5,2/7,9/15,9 | 9,0/10,7/12,1 | 1,0/1,3/1,5 | 23/27/29 |

Values corresponding to the 5th, 50th and 95th percentiles of some parameters of MCC of various genesis.

# Conclusions:

► The maximum frequency of MCC is observed over the northwestern slopes of the Altai Mountains, the Salair Ridge and the Baraba Lowland.

► The ICC recurrence center over the north-west of the Altai Mountains is represented by airmass cases, and the centers over the Salair Ridge and the Barabinskaya Lowland are frontal.

► Increasing the frequency of occurrence of the ICC observed over the eastern part of the Vasyugan swamp.

Allocated 4 classes of MCC over the south of Western Siberia:

► Class 1: small, low, low-water;

► Class 2: large, low, low-water;

► Class 3: small tall aquatic;

► Class 4: large high aquatic.

# Thank you for your the attention!