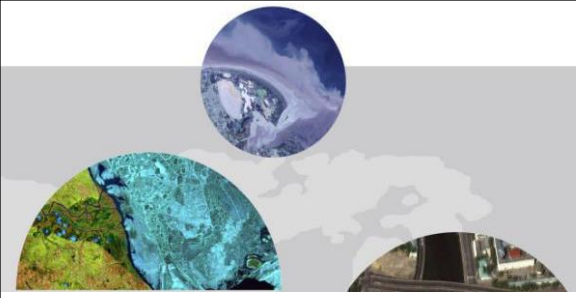
"MeteoLenta"® software package for thematic processing data from meteorological satellites, including those received at the "Lenticularis" ground station

METEOLENTA™

Skolkovo · Фонд содействия инновациям · ФРИИ · LORETT ENGINEERING COMPANY · Transparent World · ECOBUREAU GREENS



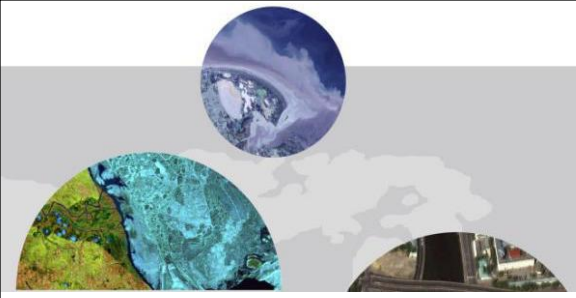
The “MeteoLenta”® software package is designed to process satellite digital HRPT information of the AVHRR radiometer, received by the Lenticularis station from NOAA and METOP satellites, on the topics of hydrometeorological and environmental monitoring.

Processing is currently possible for NOAA 15/18/ 19 and METOP-A/B/C satellites.

Operating sysytem - Windows

Initial information

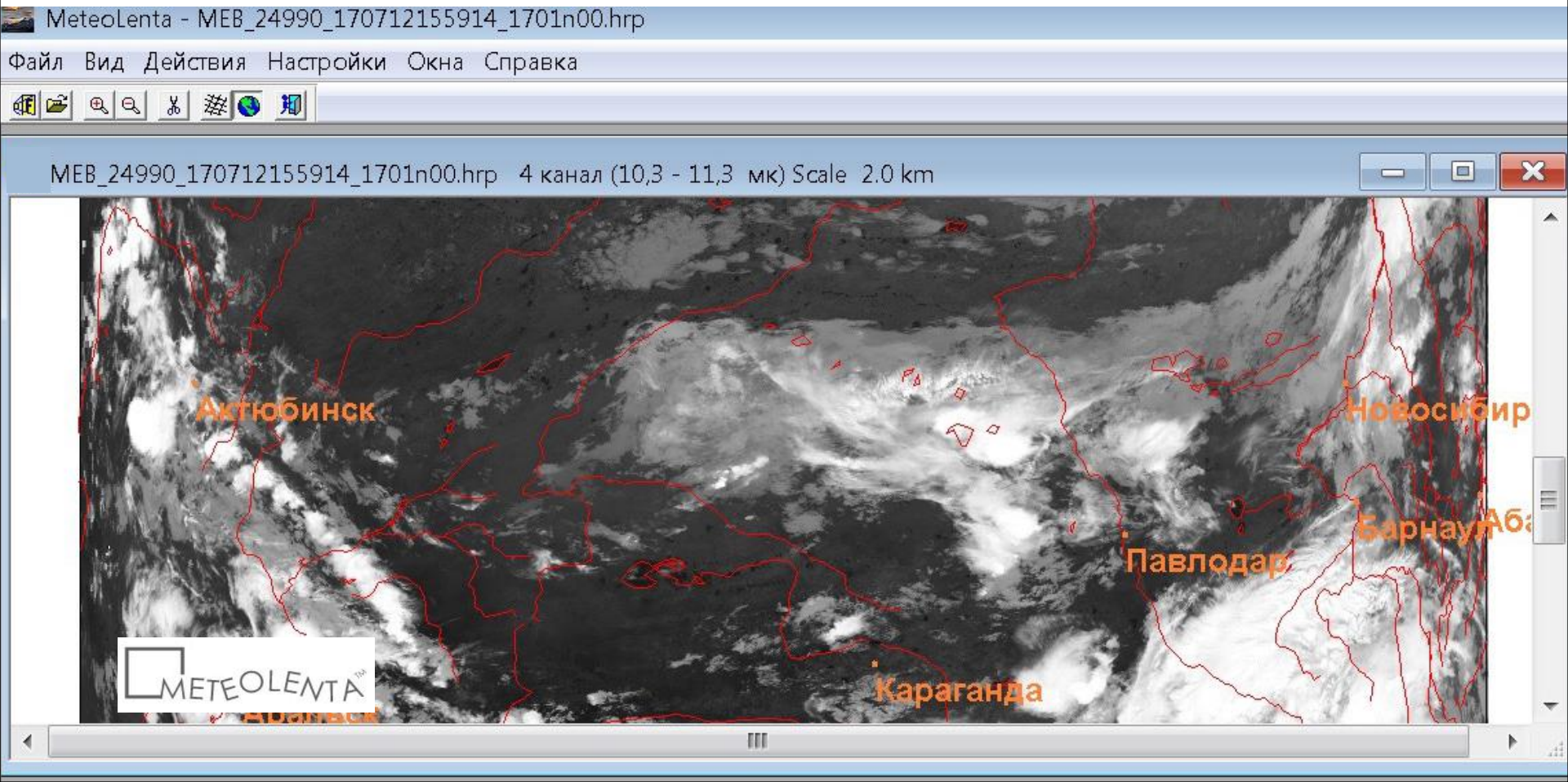
# channel	AVHRR spectral ranges (μm)
1	0.58- 0.68
2	0.725- 1.0
3a/b	1.57-1.64/ 3.55- 3.93
4	10.3 –11.3
5	11.4 –12.4



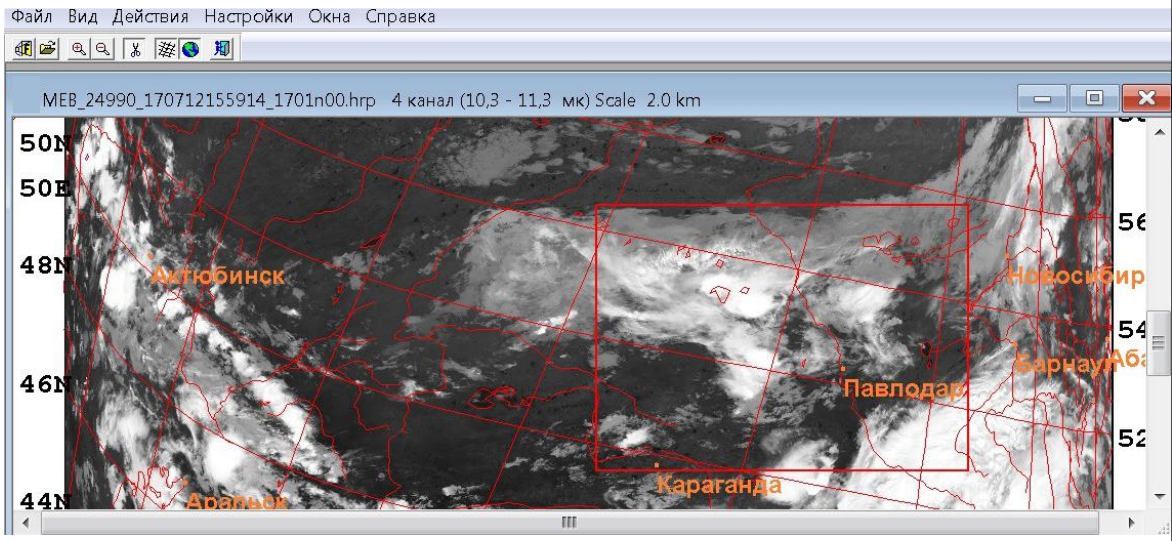
PURPOSE OF THE MAIN MENU OF THE "METEOLENTA"®

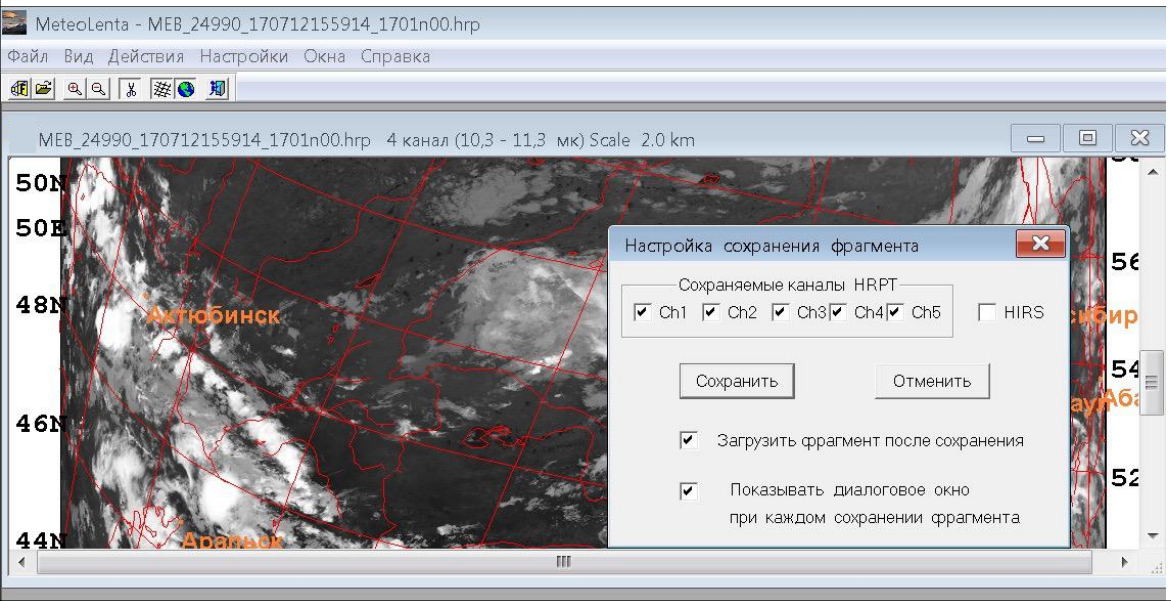
- viewing files with initial information;
- preparing data for thematic processing or to replenish regional archives: cutting and saving fragments.

VIEW OF THE MAIN MENU OF THE "METEOLENTA"®



SELECTION OF A FRAGMENT, CUTTING AND SAVING





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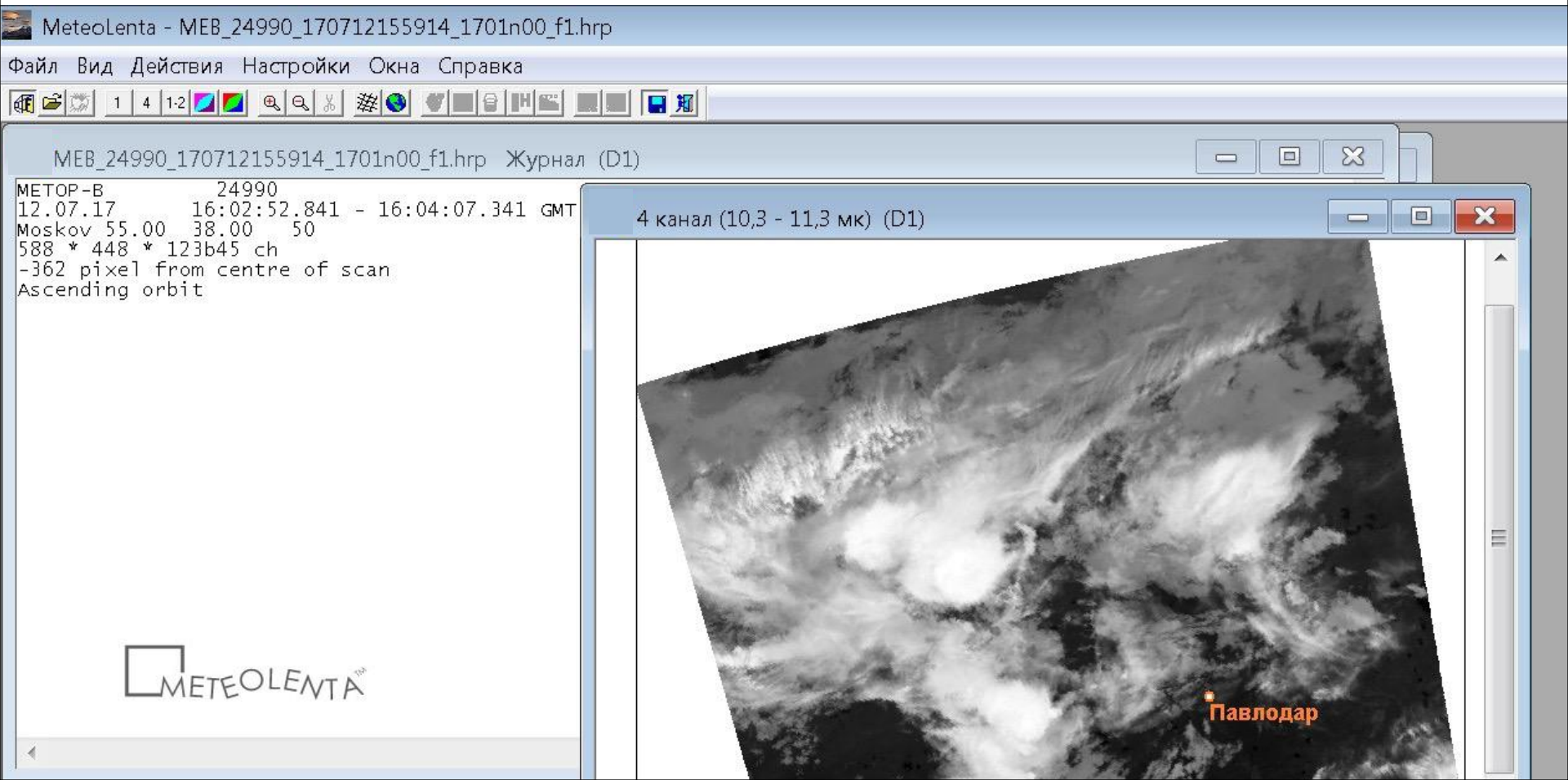
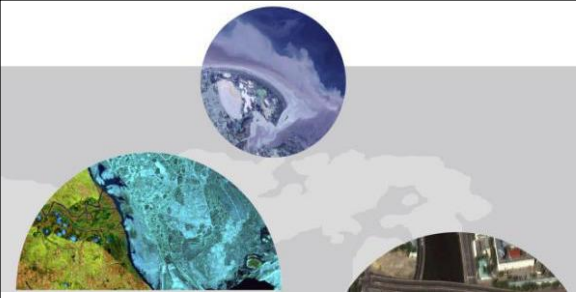
VIEW OF THE THEMATIC DATA PROCESSING MENU

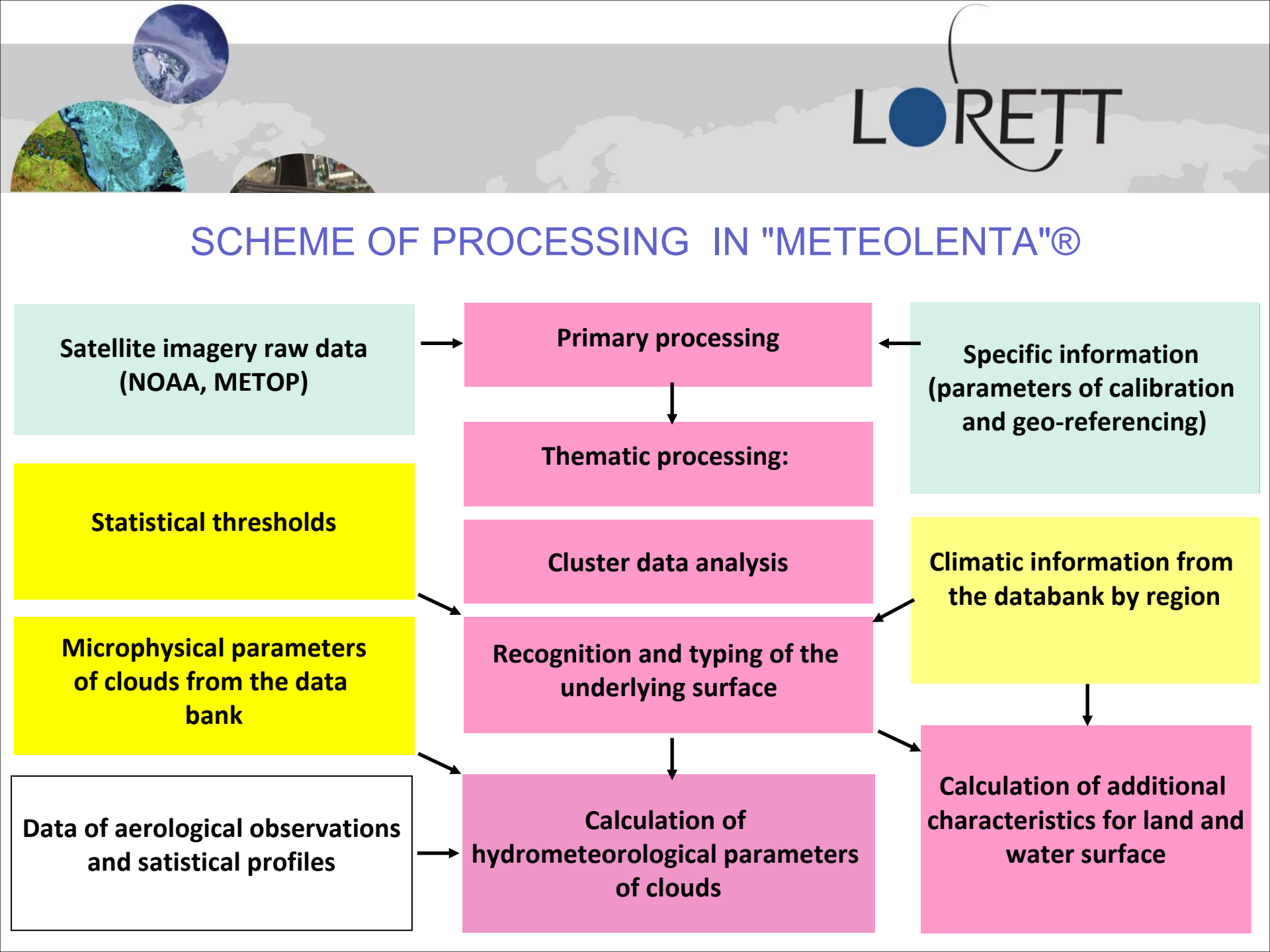




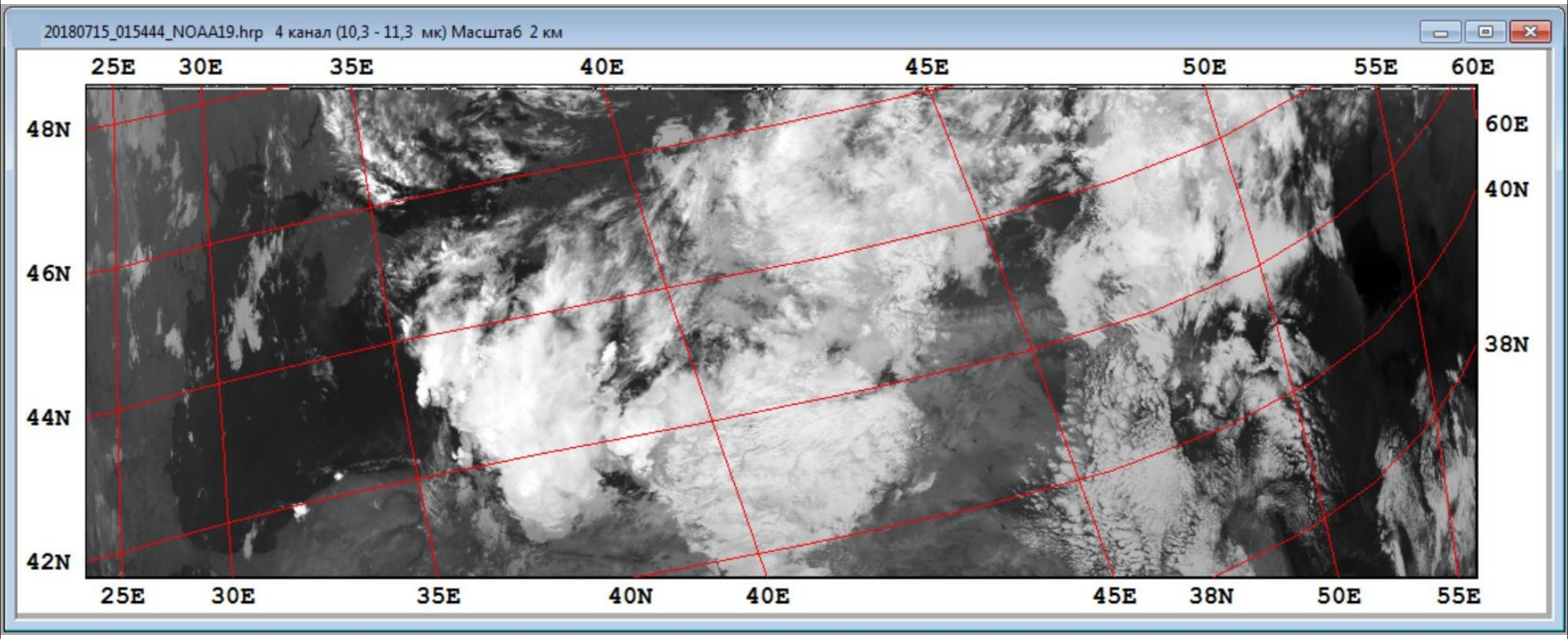
THE MENU FOR THEMATIC PROCESSING OF IMAGES IN “METEOLENTA”® IS INTENDED FOR:

- viewing images;
- calibration of initial data;
- geographic referencing;
- presentation of images in a given cartographic projection;
- coastline drawing;
- cutting out fragments;
- saving fragments to disk;
- classification of underlying surfaces by type;
- calculation of thematic characteristics of underlying surfaces and representation of their numerical values in the form of raster images;
- export of images to graphic formats;
- print output;
- viewing previously obtained results of thematic processing, if any.

SCHEME OF PROCESSING IN "METEOLENTA"®

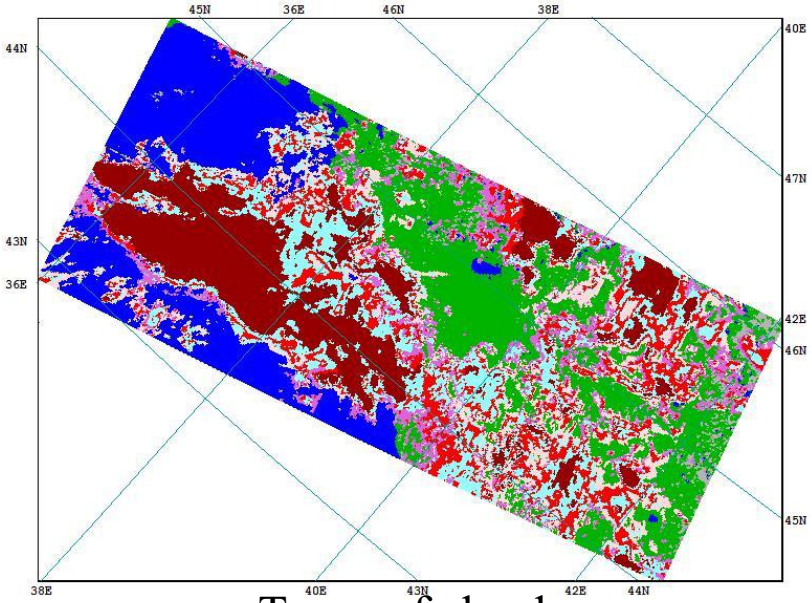


INITIAL INFORMATION FOR THE "METEOLENTA"®

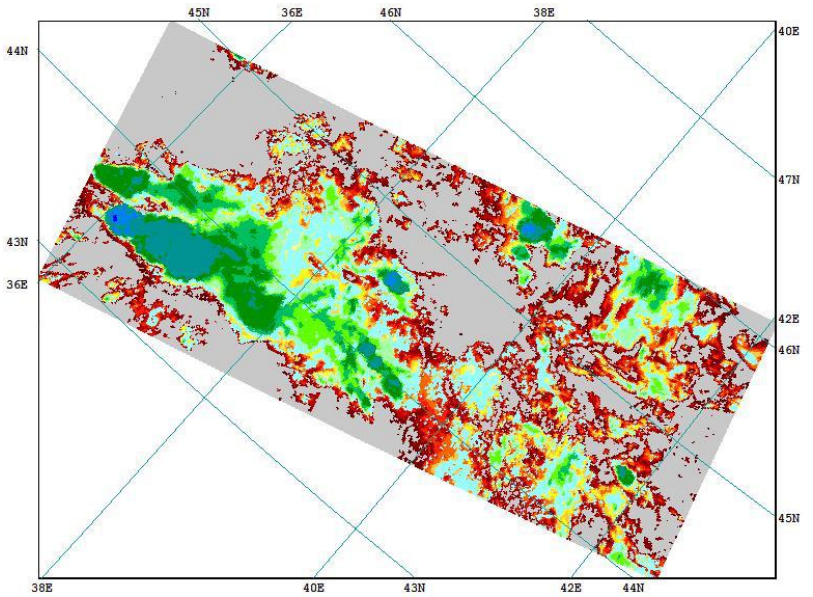


NOAA19 17.07 2018, 13.00 GMT or 16.00 MSK, Anapa

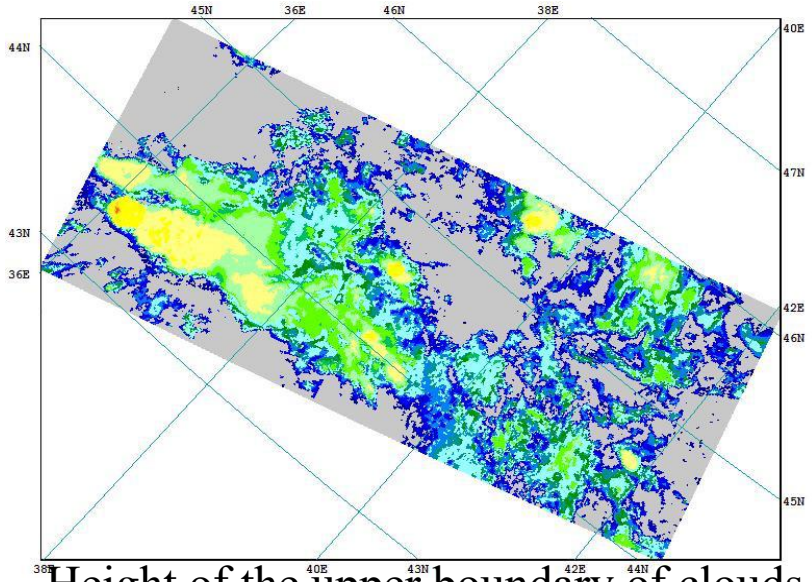
RESULTS OF DATA PROCESSING IN “METEOLENTA”®



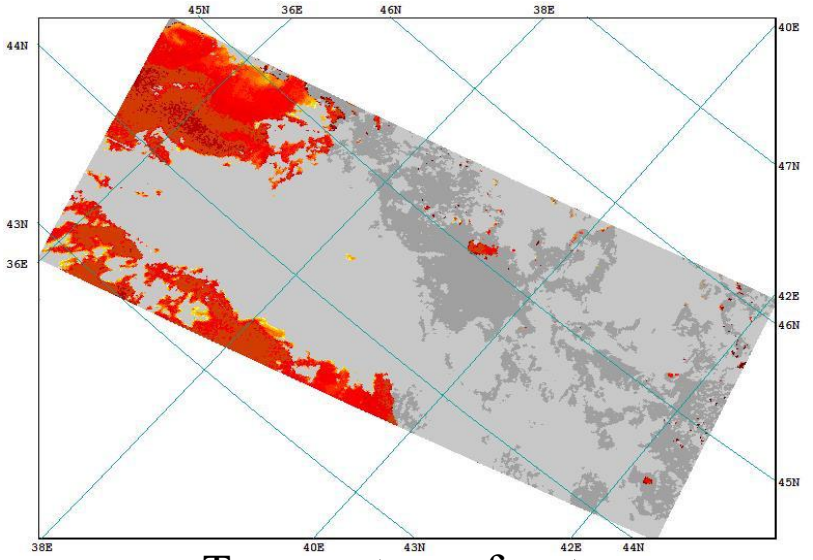
Types of clouds



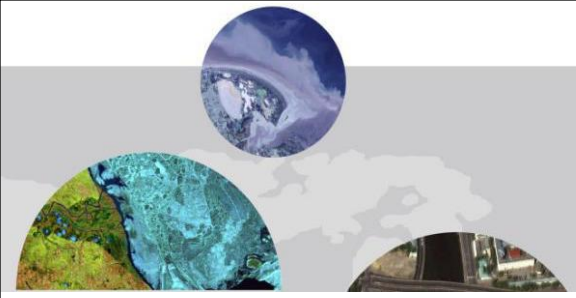
Temperature of the upper boundary of clouds



Height of the upper boundary of clouds



Temperature of water



ANALYSIS OF THE SITUATION ON JULY 17, 2018 BASED ON THE RESULTS OF SATELLITE DATA PROCESSING

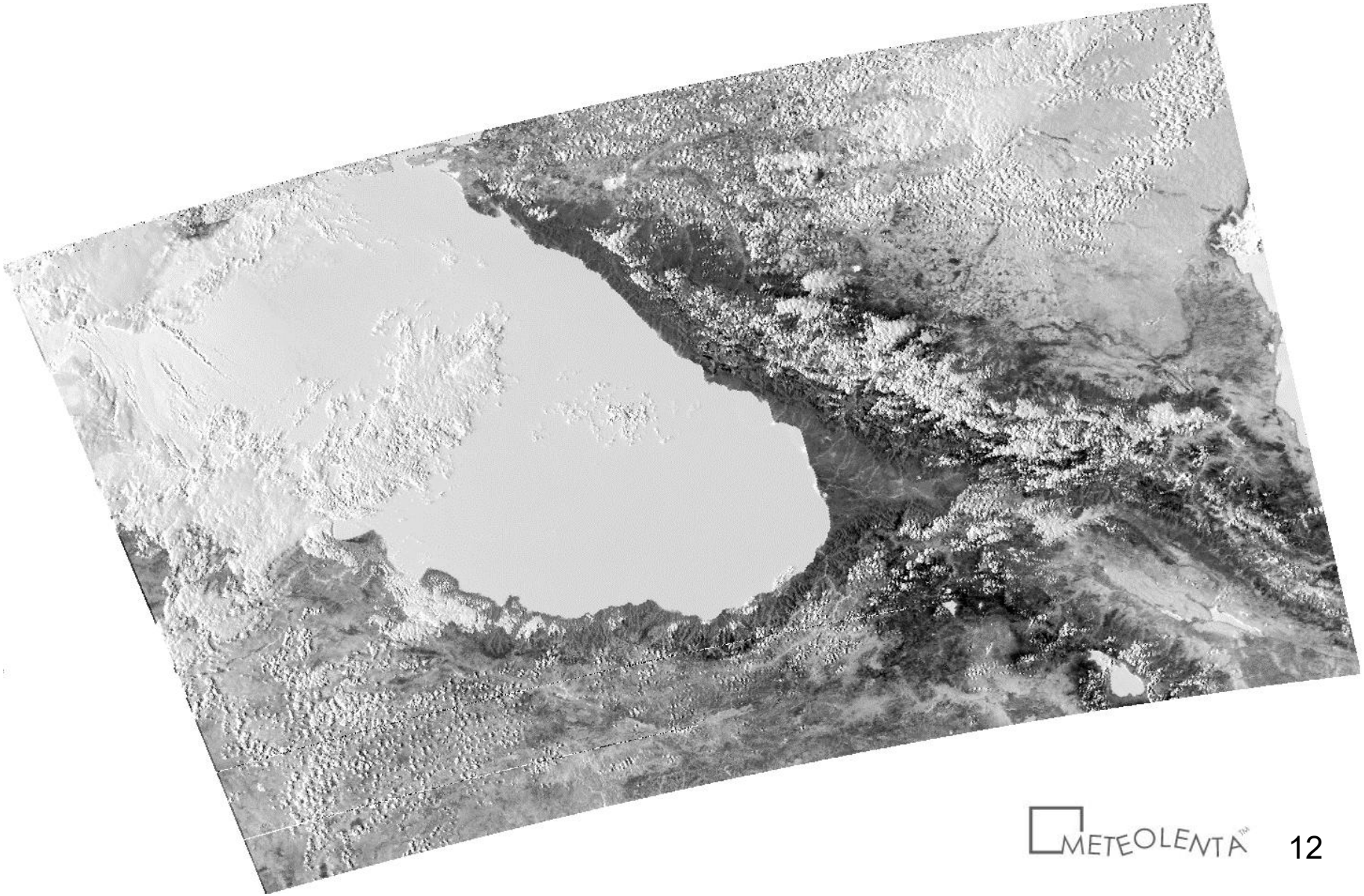
Strong convective clouds over the Black Sea: the mass of cumulonimbus clouds is covered by cirrus clouds.

Cumulus and Altocumulus clouds are everywhere. There are also cirrus clouds here and there.

The minimum temperature of the upper boundary of clouds is -52.9 degrees C. It corresponds to the height of the upper boundary of clouds of 12.7 km.

The water temperature is 23 degrees C in shaded areas and 27.8 degrees (maximum).

ORIGINAL IMAGE, 4 CHANNEL NOAA-19, 09/07/2019



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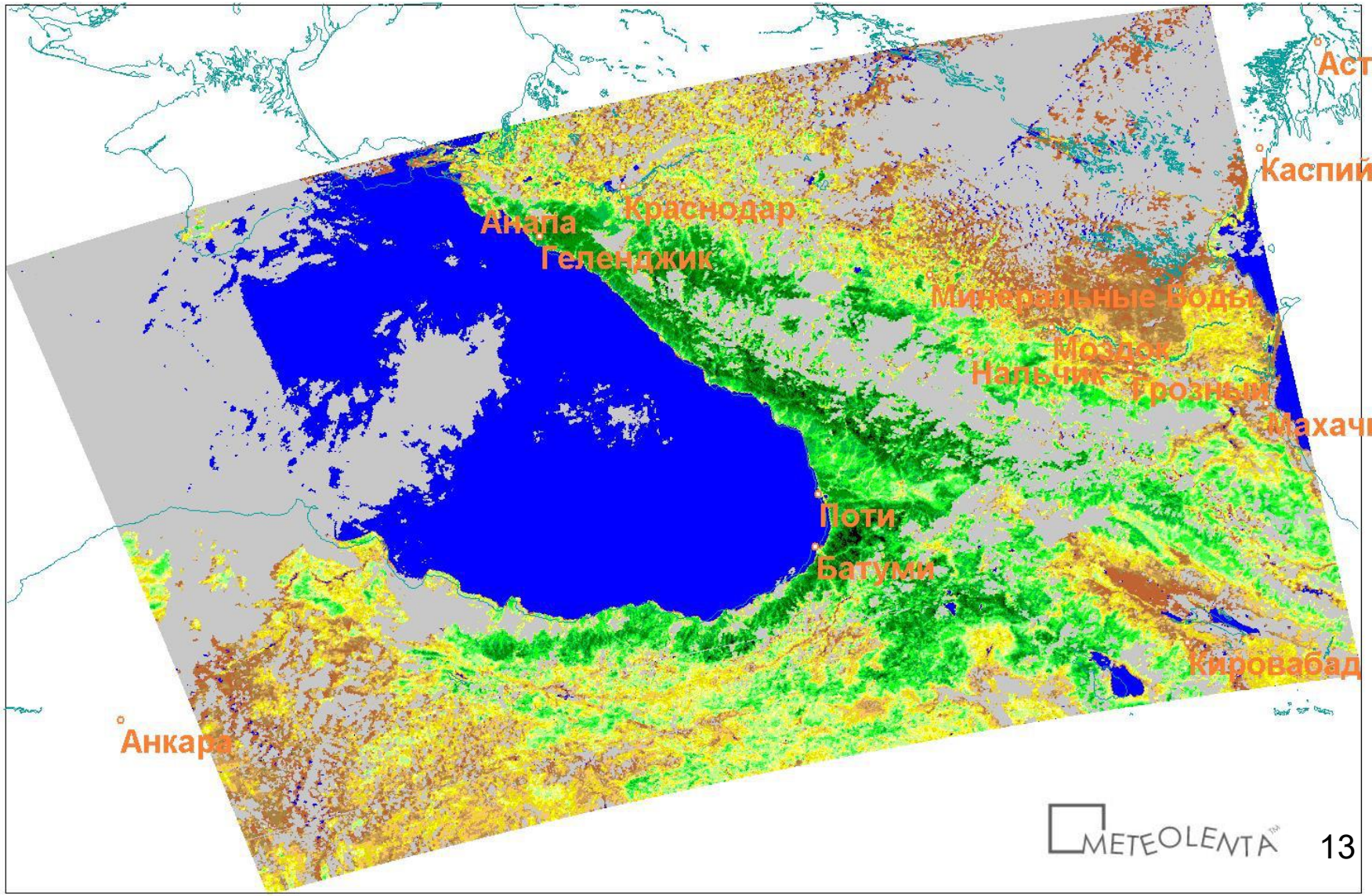
VEGETATION INDEX NDVI - NORMALIZED DIFFERENCE OF 1 AND 2 CHANNELS HRPT



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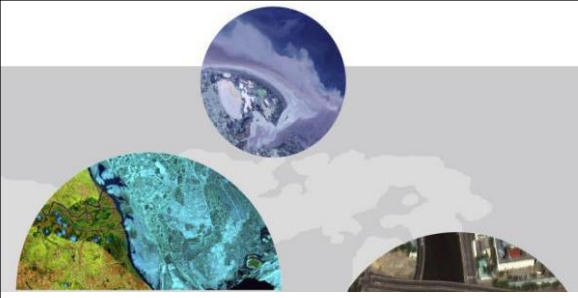
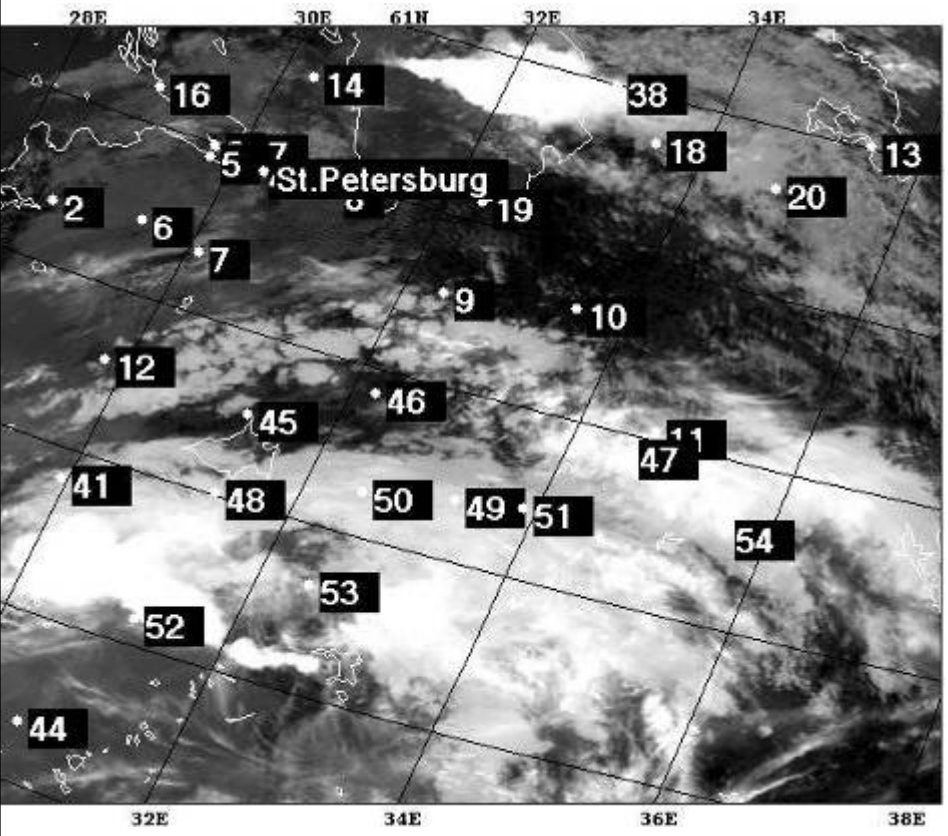


LORETT

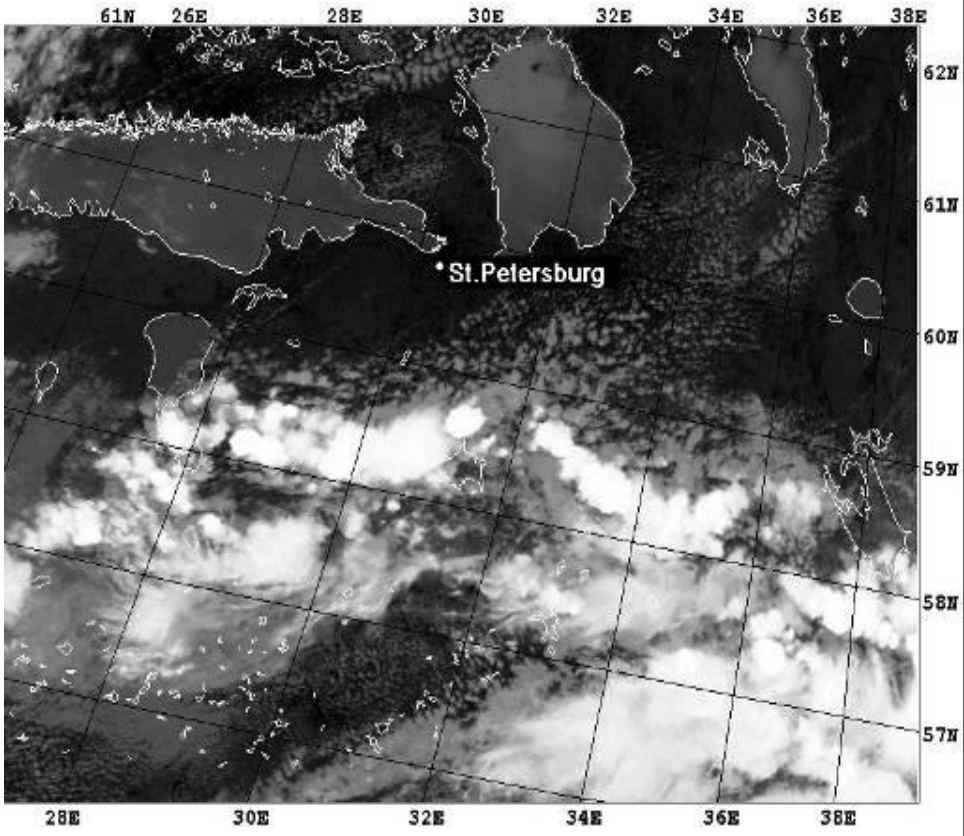
THE MAIN TASKS PERFORMED BY THE “METEOLENTA”® IN SUMMER:

- monitoring of cloudiness of synoptic and meso-scales;
- tracking dangerous convective clouds in summer and related processes:
- squalls;
- showers;
- thunderstorms;
- determination of characteristics of precipitation-forming types of cloudiness: classification of cloudiness, calculation of temperature and height of the upper boundary, assessment of water content;
- calculation of characteristics of underlying land and water surface: temperature and albedo of the water surface, vegetation index.

MID-LATITUDE CUMULONIMBUS

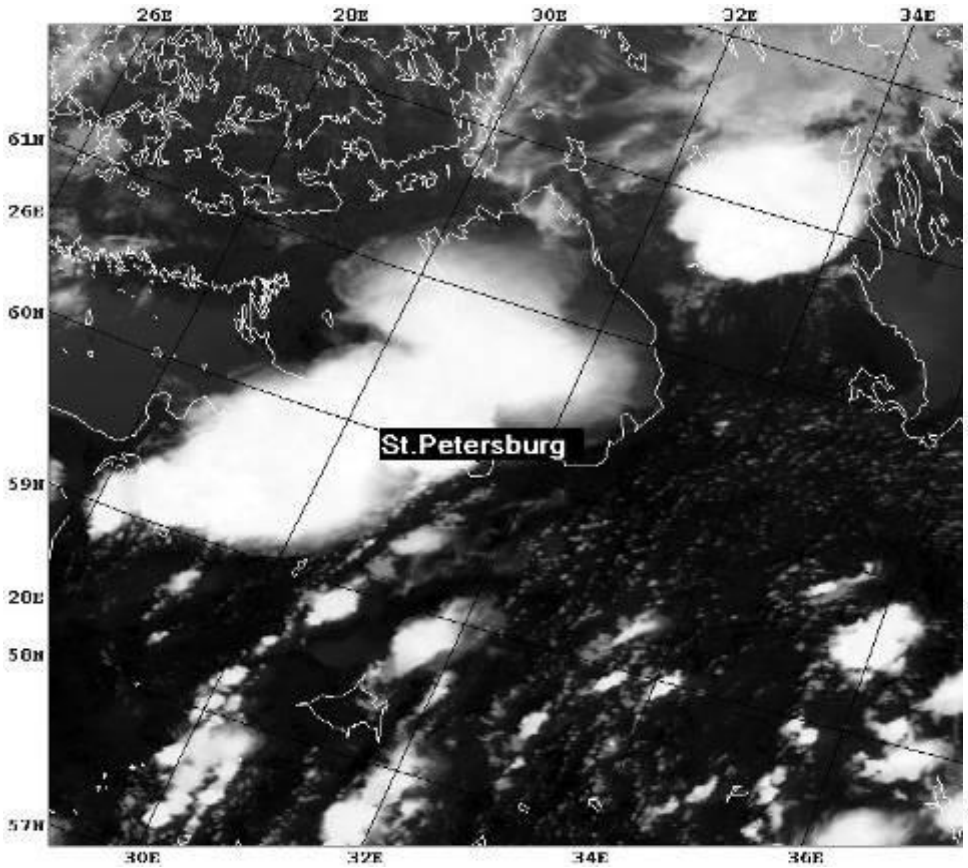


warm front

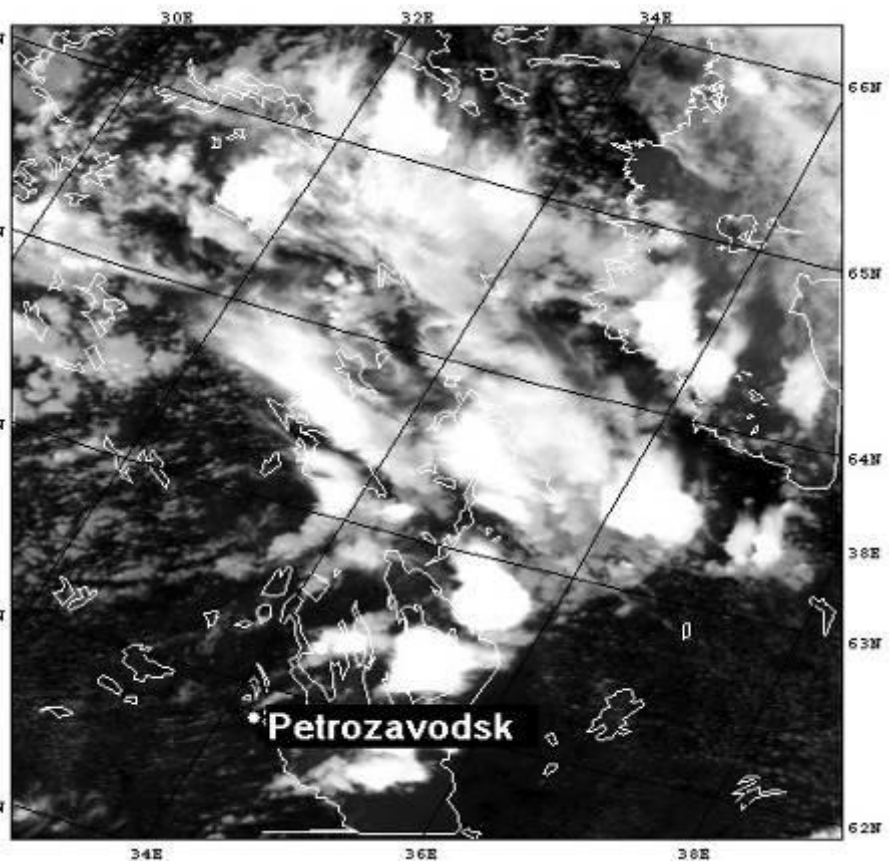


occlusion front

MID-LATITUDE CUMULONIMBUS



cold front



weakly gradient baric field

DETECTION OF DANGEROUS PHENOMENA

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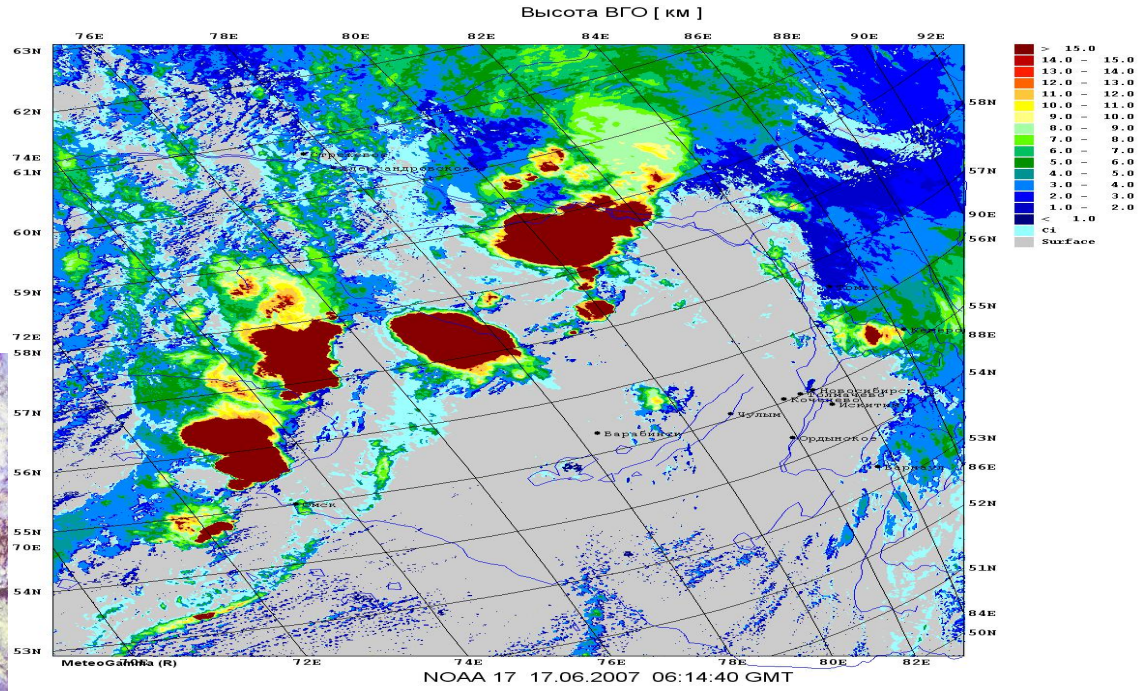
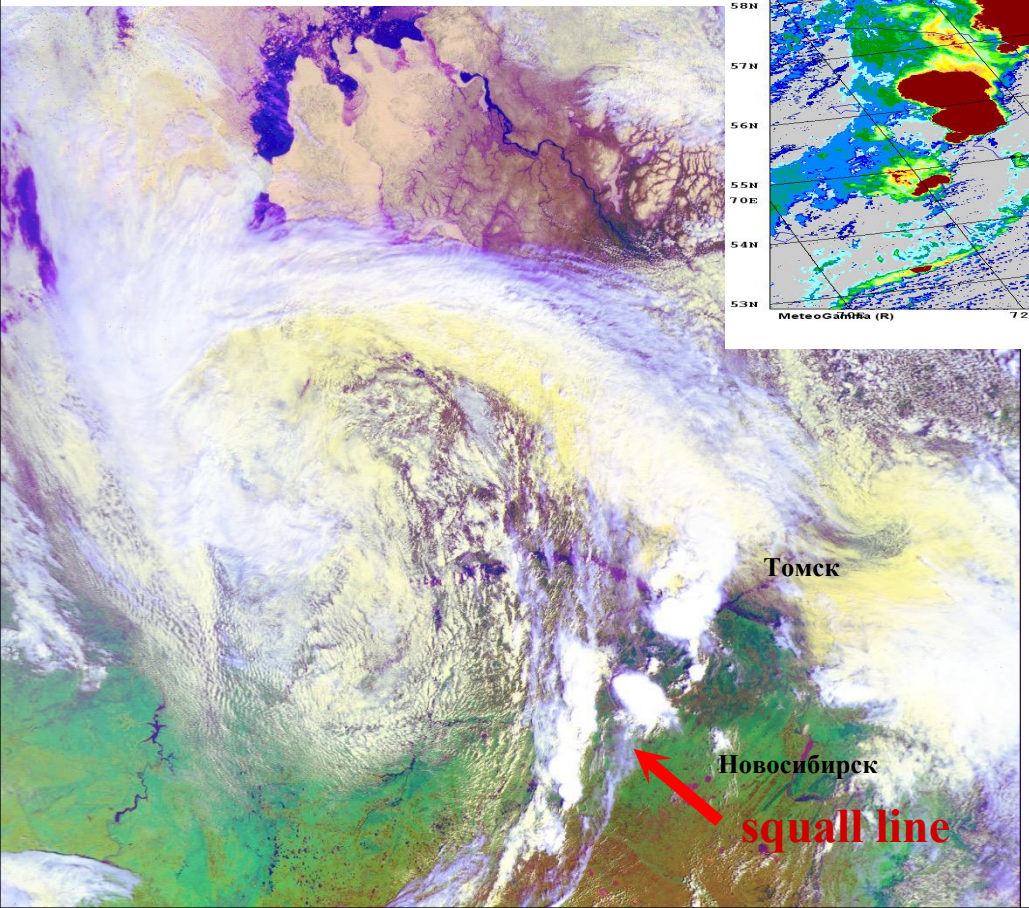




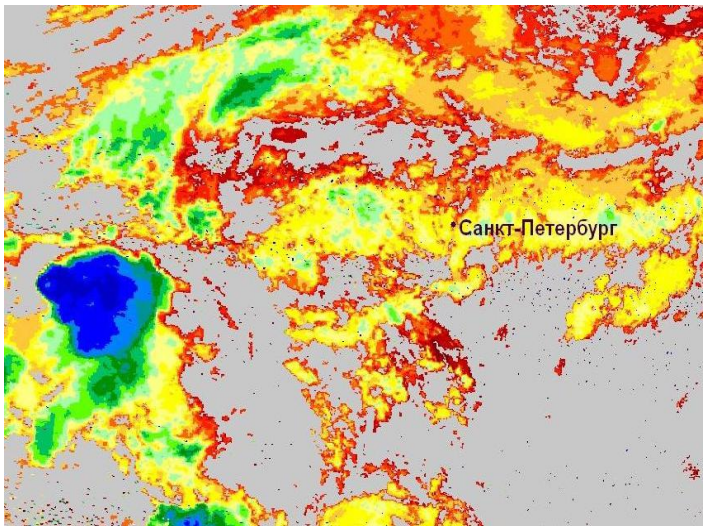
thunderstorm

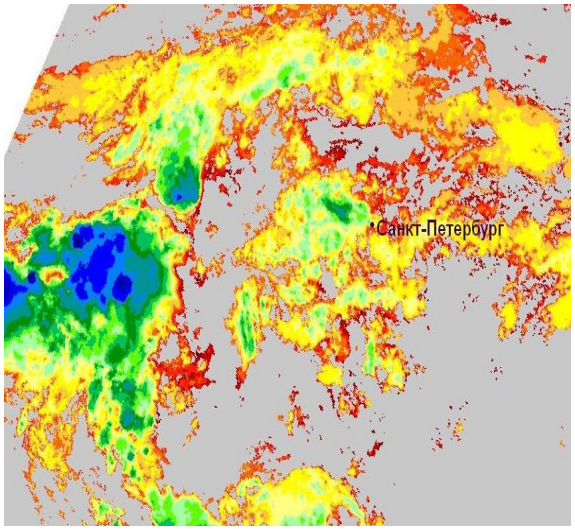
heavy rain

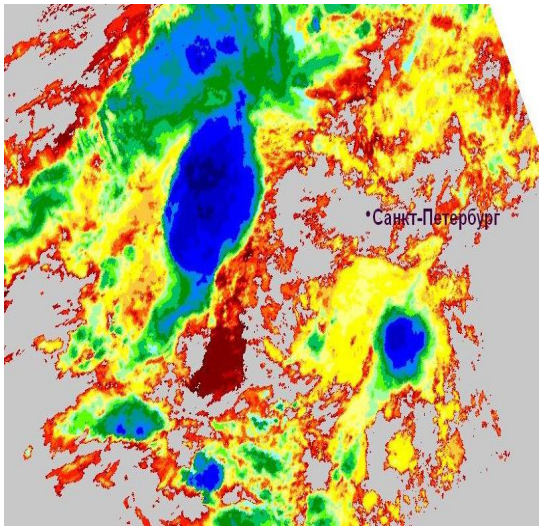
hail

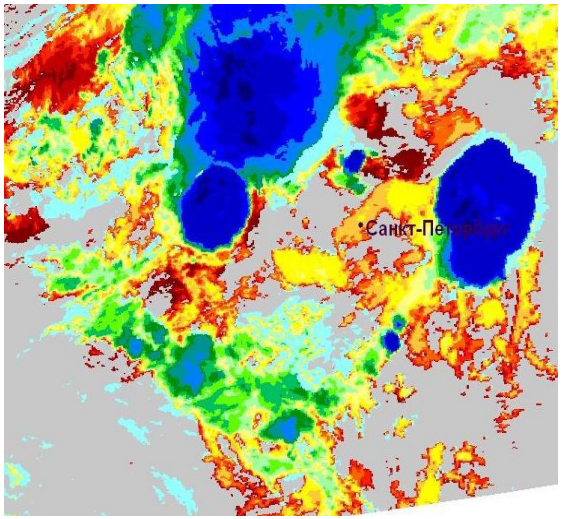
TRACKING CHANGES (DYNAMICS), TEMPERATURE OF THE UPPER BOUNDARY OF THUNDERCLOUDS (03.22-14.54 GMT)

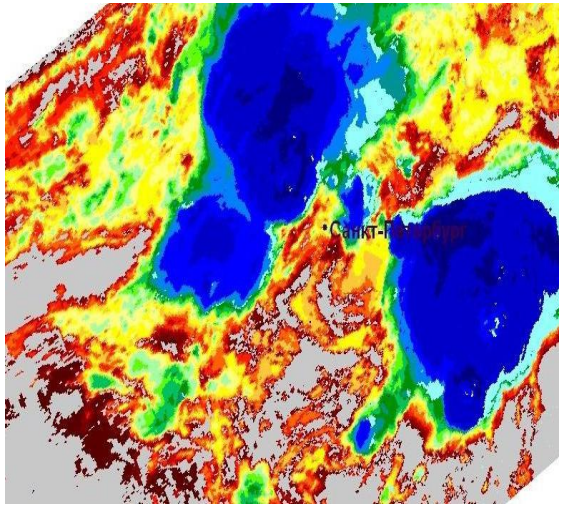
METEOLENTA

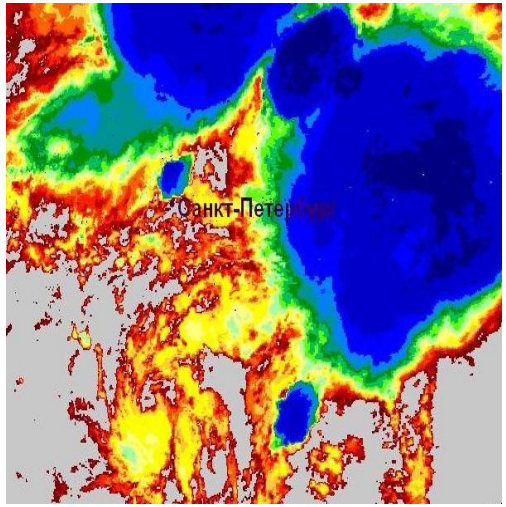


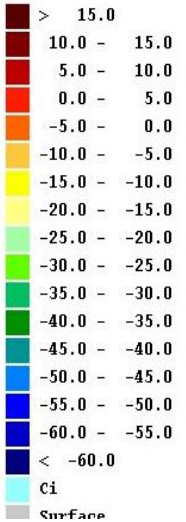




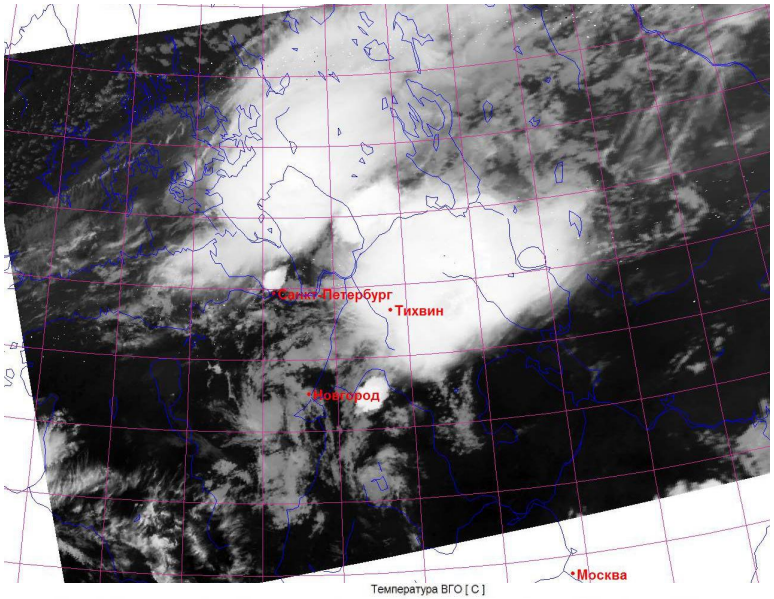








MESOSCALE ANALYSIS OF CLOUD FIELDS



Cumulonimbus thunderstorm clouds over the territory of the Leningrad region, raw data in the infrared range

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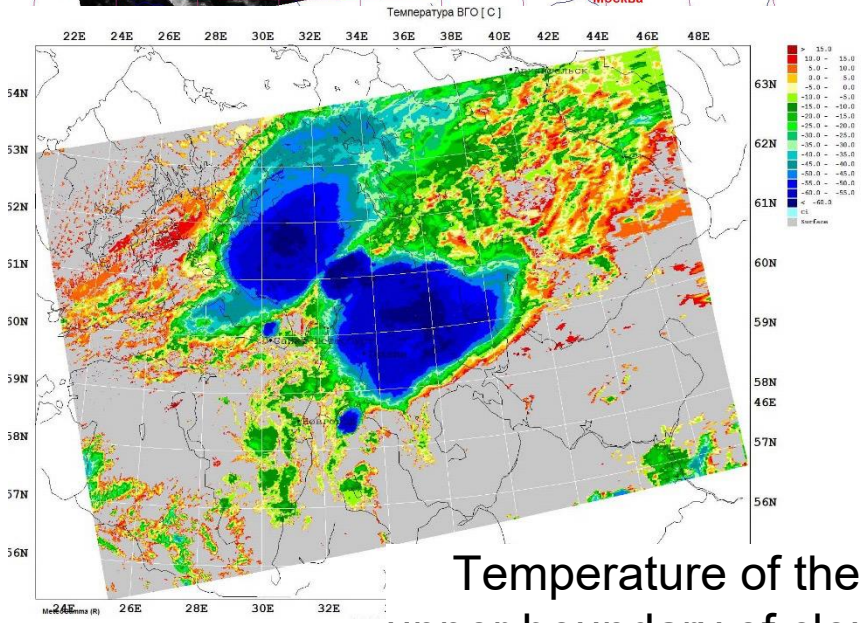
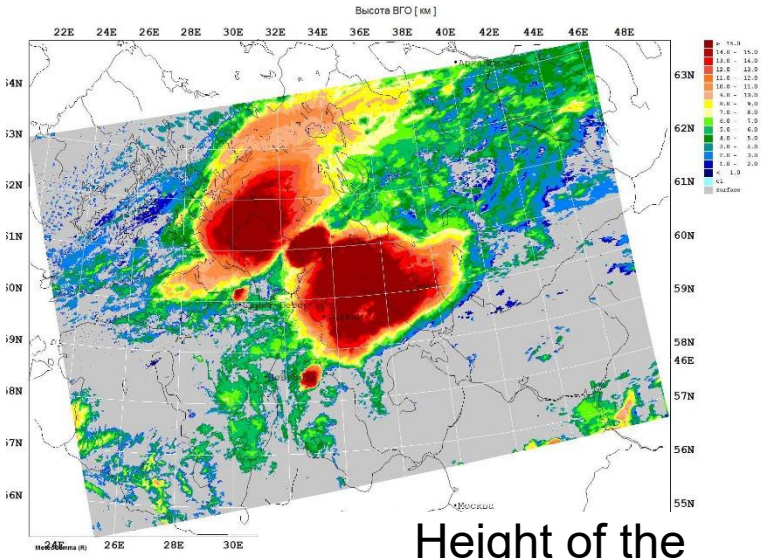


Temperature of the upper boundary of clouds



Height of the upper boundary of clouds

РОССИЙСКАЯ ФЕДЕРАЦИЯ

СВИДЕТЕЛЬСТВО

о государственной регистрации программы для ЭВМ

№ 2019661898

Программный комплекс «MeteoLenta»

Правообладатель: *Общество с ограниченной ответственностью «Лоретт» (RU)*

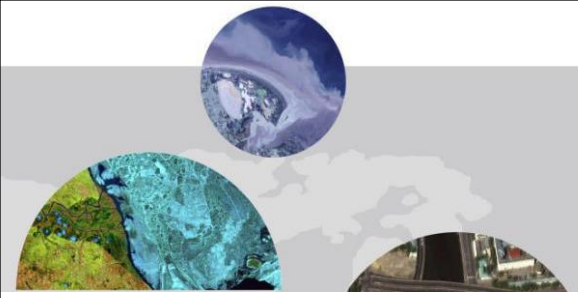
Авторы: *Буланов Сергей Николаевич (RU), Чичкова Елена Федоровна (RU)*

Заявка № 2019660891
Дата поступления 04 сентября 2019 г.
Дата государственной регистрации в Реестре программ для ЭВМ *11 сентября 2019 г.*

Руководитель Федеральной службы по интеллектуальной собственности

Г.П. Ивлиев

CERTIFICATE OF REGISTRATION OF "METEOLENTA"®



THANK YOU FOR YOUR ATTENTOIN!

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