



BMSU Radiometric Systems and Applications

Professor Alexander Gudkov

Associate professor Igor Sidorov

Presentation

Moscow Russia November 2021

Bauman Moscow State University



Disasters caused by dam leaks

Moscow



The Netherlands



Kazakhstan



Hungary



Bauman Moscow State University



"Mirage" series of portable radiometers

Full-scale tests. Bulgaria 2008



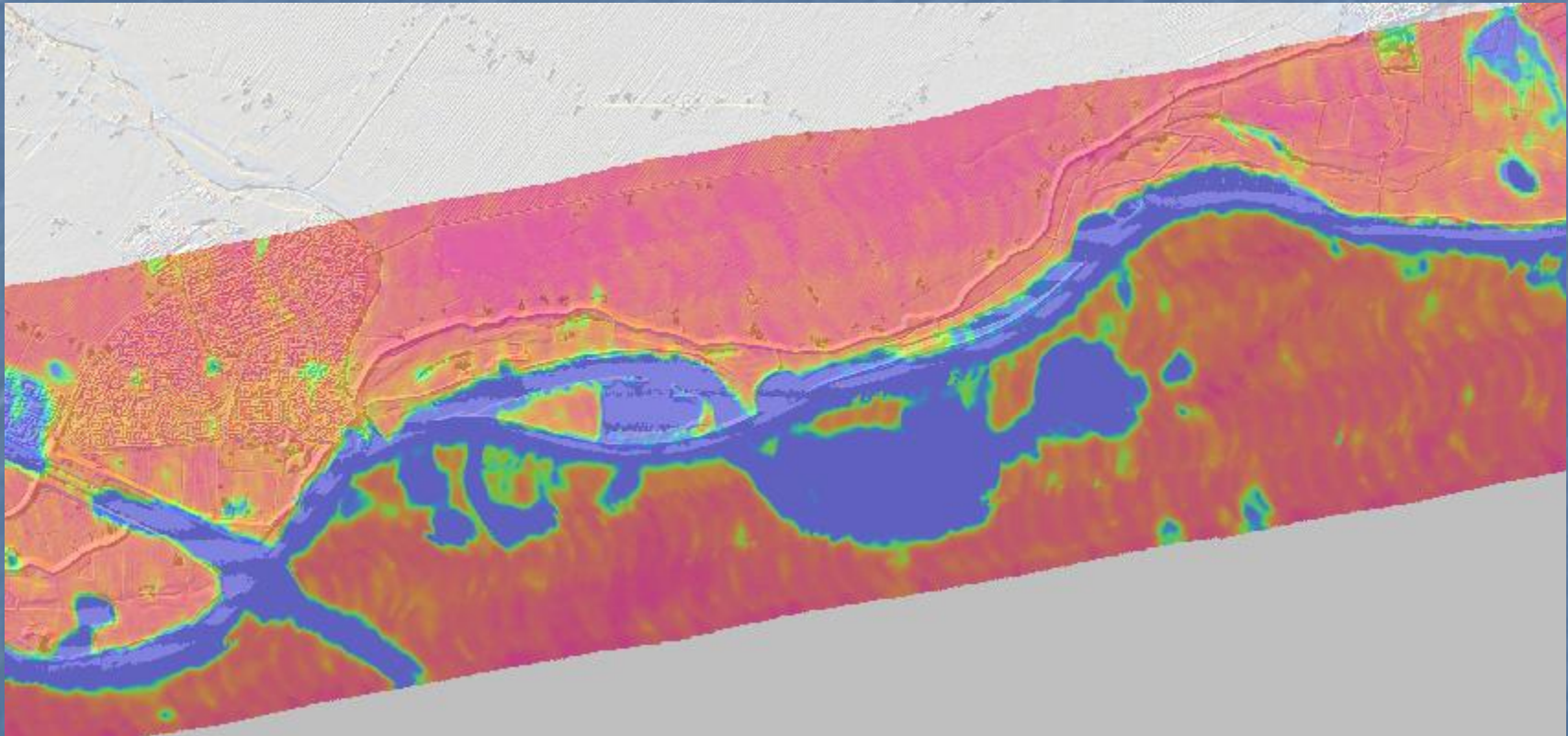
Bauman Moscow State University



Dam condition monitoring «Mirage-21» equipment (The Netherlands)



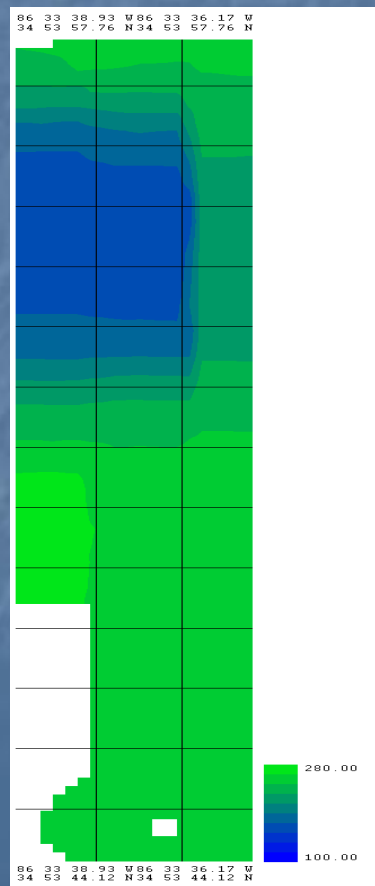
The Netherlands, underground leaks in earthen dams



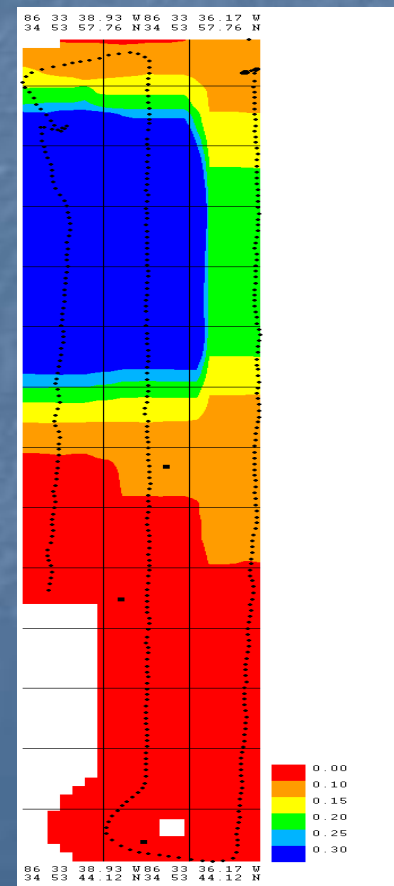
Radiometer on an unmanned helicopter with AAMU and NASA (USA) support



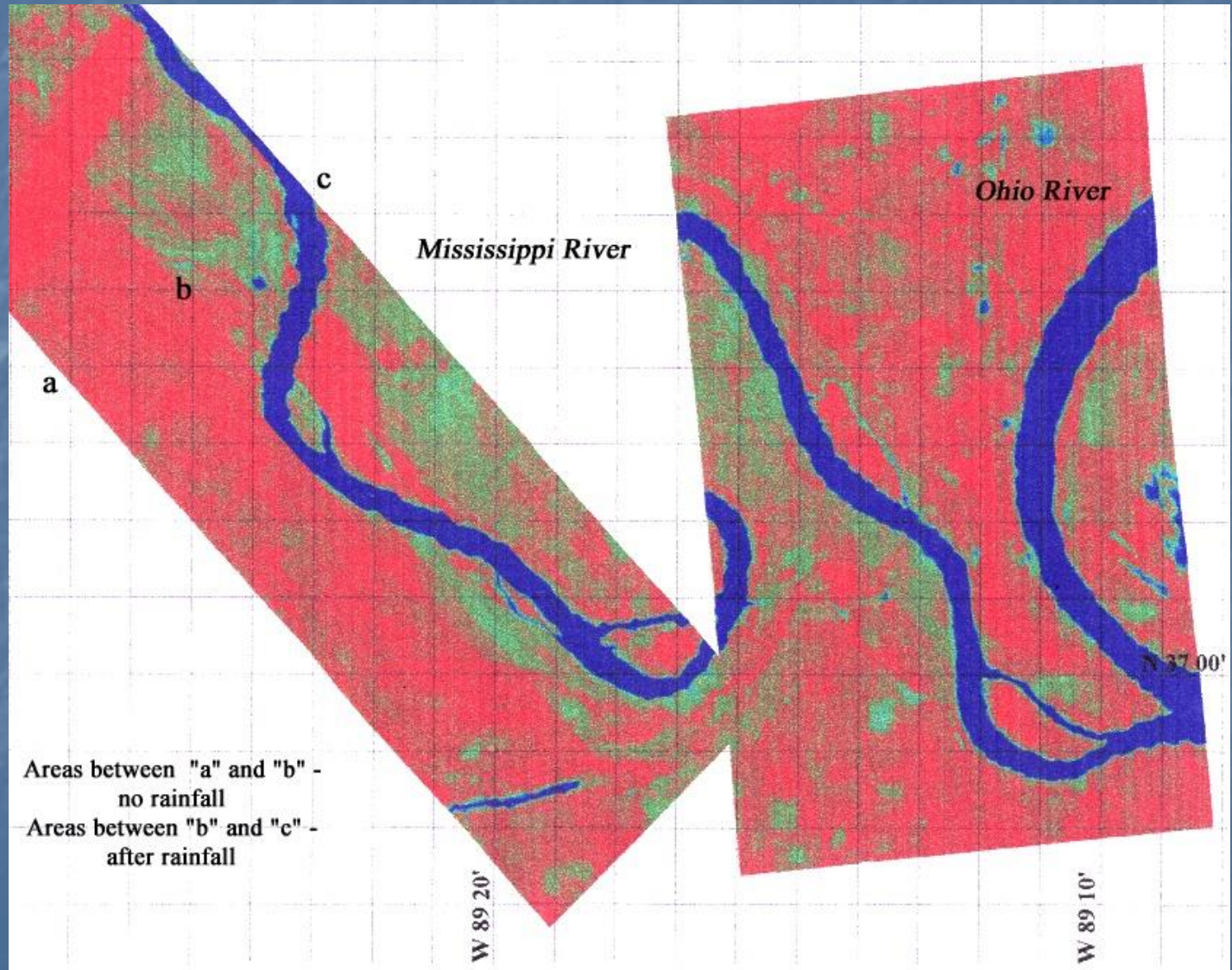
Brightness map



Moisture map

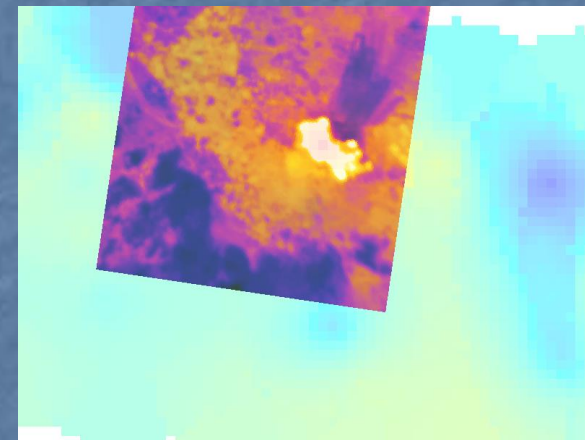
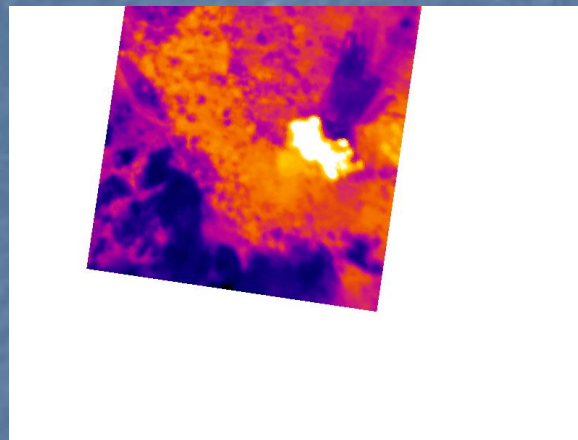
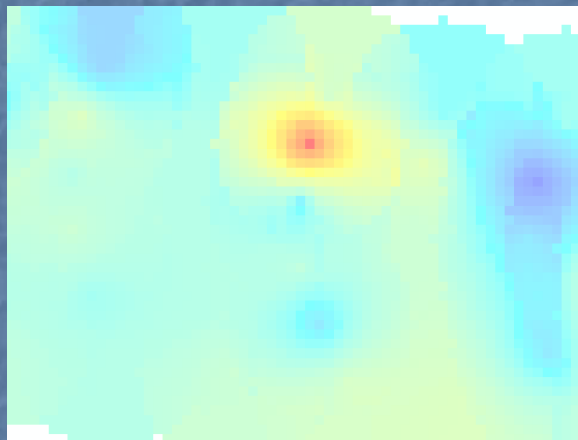


Mississippi and Ohio Rivers near Cairo, Illinois

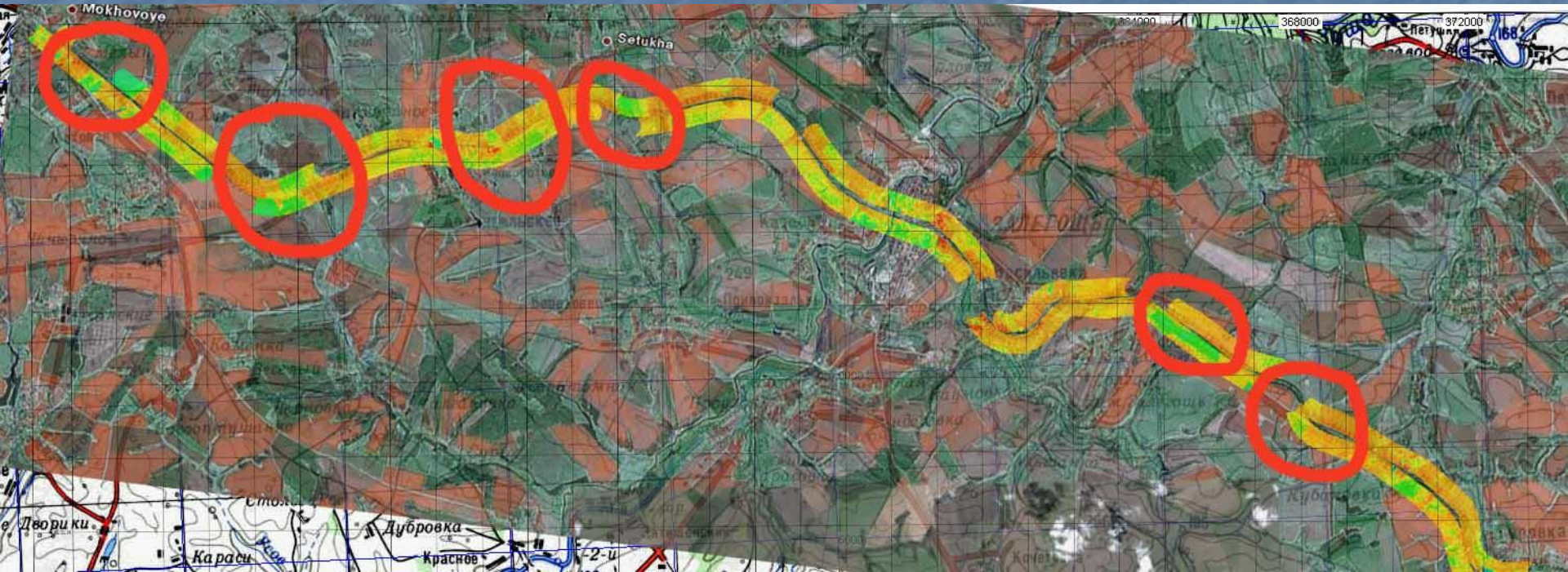




The focus of a forest fire is the data of a microwave radiometer of 5 cm. in comparison with the data of a thermal camera



Russia, Orel-Yelets railway line. Underground leaks



Bauman Moscow State University



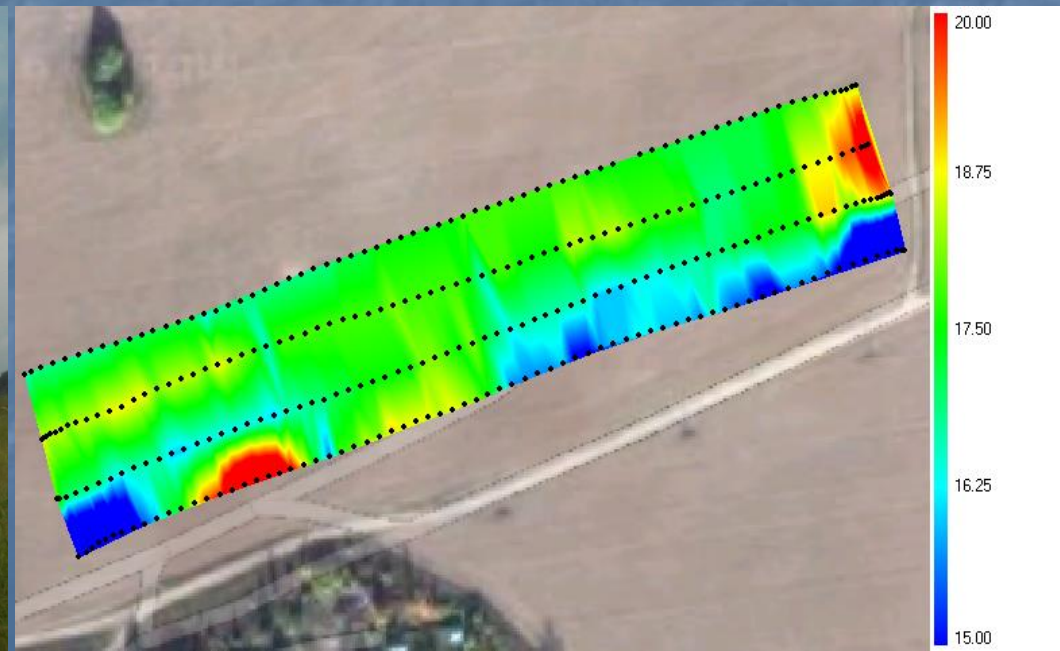
The results of radiometric sensing of the road surface of the Moscow-Minsk highway from 200 to 250 kilometers with the construction of maps of subsurface moisture content, made in April - July 2014.



Bauman Moscow State University



A full-scale experiment to measure soil moisture in a layer up to ten centimeters and soil surface temperature using a microwave radiometer placed on board an unmanned aerial vehicle, made in July 2016.

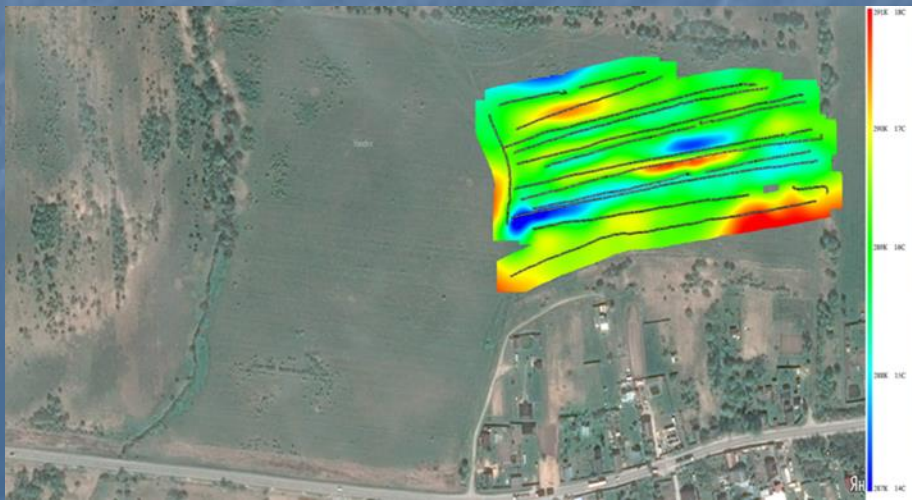


Field tests October - November 2021



Soil temperature

Soil moisture





Discussion