

First part of the thesis introduces possibilities of depicting of the data provided by the MSG (Meteosat Second Generation) satellite. Different color combinations (RGB – red, green, blue) description made by the basic channels combination follows. The main part of this thesis is focused on *T-re* profiles (*T* - temperature, *re* - effective cloud particle radius). The analysis of profiles of temperature versus the effective radius of cloud particles shows the vertical distribution of the effective particle size in clouds. The profiles are computed and constructed from the satellite retrieved data and they show graphically the distribution of cloud particles and indirectly represent the severity of the developing storms. Forecasting and predicting dangerous phenomena such as hailstorms or tornados that occur in severe storms is the main objective of the technique. This nowcasting tool was tested in Central Europe and the end of this thesis presents the results of the testing.