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CONTROL ID: 1479996**TITLE:** THE RELATIONSHIP BETWEEN FIRE ENERGY RELEASE AND WEATHER CONDITIONS IN RUSSIAN SIBERIA

ABSTRACT BODY: Active fire remote sensing performed using spaceborne systems, such as MODIS radiometer aboard the Terra and Aqua satellites, provides observations of fire locations, as well as an estimate of the amount of energy released by the fire (Fire Radiative Power). Such measures of fire radiative power (FRP) provide information on fireline heat release intensity and on the amount and rate of biomass combustion in the large scale.

Biomass combustion rate is strongly related to fuel moisture and therefore to weather conditions. The correlation analysis of fire radiative power and weather fire danger was performed for the territory of Siberia. The measurements were made during stable anticyclons which lead to severe drought that caused extreme fire behavior. Weather conditions were characterized using weather fire danger indices. The measurements of FRP were performed using MODIS instrument and weather fire danger indices were calculated using weather stations data. The analysis was performed for several Siberian regions mostly liable to fires. Weather fire danger was characterized by Russian fire danger indices and using Canadian Forest Fire Weather Index System. Only large fires having the final size of more than 500 ha were focused in this study. For the most weather stations it was rather good agreement between the fire danger indices and the measured fire radiative power for the most of the fires. For the weather stations considered the following weather indices had the best correlation with measured FRP values: Russian PV-1 index and Canadian DMC, DC and BUI indices. A regression model was formulated to characterize the relationship between wildfire radiative power and fire danger indices. However, it was found that the relationships have regional specificity and none of these indices can be considered as universal.

CURRENT SECTION/FOCUS GROUP: Global Environmental Change**CURRENT SESSION:** GC019. Environmental, Socio-economic and Climatic Change in Northern Eurasia and Their Feedbacks to the Global Earth System**INDEX TERMS:** [1640] GLOBAL CHANGE / Remote sensing.**AUTHORS/INSTITUTIONS:** E. Shvetsov, V.N. Sukachev Forest Institute, Krasnoyarsk, RUSSIAN FEDERATION;**SPONSOR NAME:** Evgeny Shvetsov**CONTACT (E-MAIL ONLY):** e_shvetsov@hotmail.com**TITLE OF TEAM:**



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