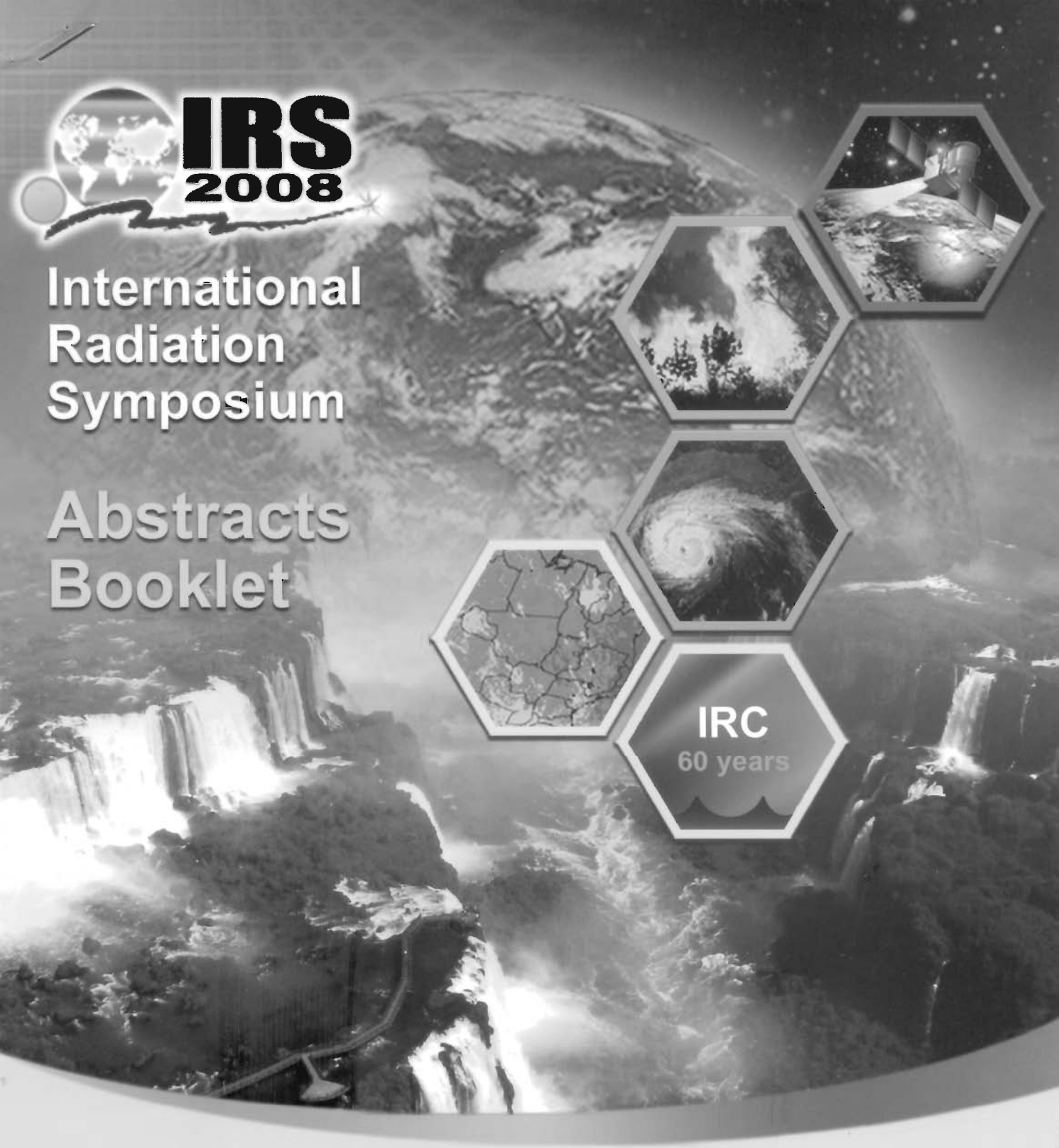

03 to 08 August 2008

MABU THERMAS & RESORT

Foz do Iguaçu - Paraná - Brazil

OA 05

THE CURRENT STATUS OF BURNED AREAS ESTIMATES AND THEIR ATMOSPHERIC EMISSIONS

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Vegetation fires are a major source of aerosols and gases which affect the earth's radiation balance, and therefore are also linked to climatic variability, either regional or planetary. Active fires around the globe are operationally detected on a daily basis by different satellites and sensors, like NOAA/AVHRR, EOS/MODIS, TRIMM/VIRS and GOES/IMAGER and METEOSAT/SEVIRI; their location and temporal distribution are used to monitor, control and study fire occurrences, either of natural or anthropic origin. To estimate the emissions, however, also needed are the type and density of vegetation burned, the combustion efficiency, and in particular, the size of the area consumed in each event. This presentation summarizes the current remote sensing products available to estimate burned areas and the associated validation efforts using field data and high resolution imagery. The product spatial resolution is lager than ~1km because wide daily area coverage can not be obtained in high resolution imagery. Differences of about two orders of magnitude still exist between estimates and omission and commission errors prevail. Cloud shadows, plant phenology, floods, and agriculture and pasture practices cause misinterpretation in the automatic classifications of burned areas; understory fires in dense forest which are common in tropical regions, also impairs the estimates. Current products of active fire detection and of burned areas estimates should be combined with total tropospheric contents of CO, NOx, O3 and aerosols estimated in other satellite products in order to provide better estimates of atmospheric emissions.