

**RADIATIVE HEAT TRANSFER FEATURES OF
TECHNOLOGICAL INTEREST IN COMBUSTION PROCESSES
WITH HIGH LEVEL OF FLUE GAS RECIRCULATION**

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ABSTRACT. A model of radiative heat transfer in mild combustion condition has been developed for a "long furnace" type combustion chamber. Exhaust gas recirculation determines a nearly uniform temperature distribution along the combustor at temperature lower than the usual ones achieved by "normal" flames" and a different distribution of CO₂ and H₂O concentration with different values of emission coefficients, varying with recirculation level. A quantitative evaluation of the controlling parameters has been performed by means of the most simple model in order to be able to follow rationally the effect of the single input variations on radiative fluxes. Interesting indications have been pointed out both for new furnace design and combustion chambers upgrading.