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Development of Auto-Emissivity-Compensated Radiation Thermomerter

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Synopsis :

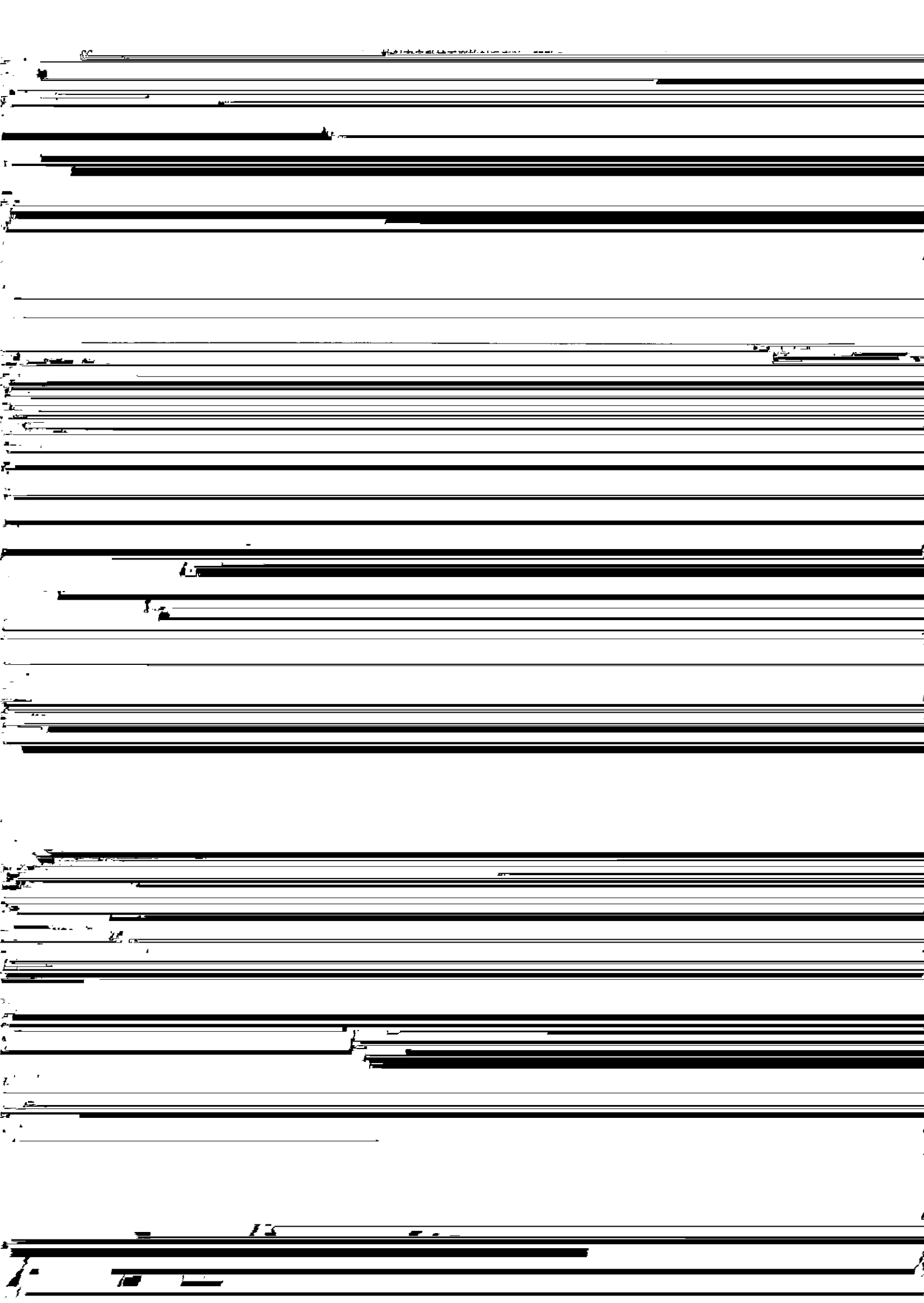
The new auto-emissivity-compensated radiation thermometer developed by the authors makes possible simultaneous measurement of temperature and emissivity by determining the degree of diffusion at the surface of the object of measurement. The thermometer uses a reference radiator of known temperature, the effective area of

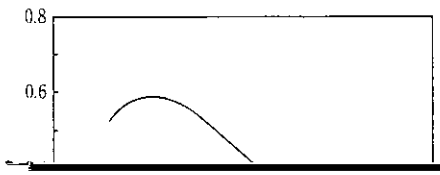
2.2 R–D 特性の同定

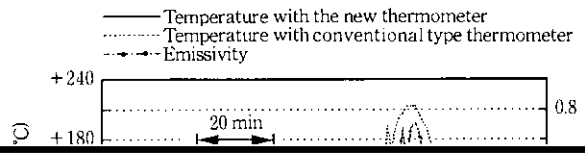
向反射率分布特性のために，スリット幅が狭いと鏡面反射成分のす

用いて行う。R と D のうち，R は(5)式から求める。一方，D は(4)式を D について整理して得られる(6)式から求める。(6)式の中の放射率 ε は，熱電温度計でサンプル温度 T_m を測定し，(7)

3 放射率自動補正型放射温度計




0.8
0.6


Temperature with the new thermometer
Temperature with conventional type thermometer
Emissivity
+240
+180
(°C)
20 min
0.8