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The heat is on - in the Planetary Emissivity Laboratory (PEL) at DLR Berlin

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The heart of the spectroscopic facilities at DLR in Berlin is the Planetary Emissivity Laboratory (PEL) which has been completely refurbished in the last two years. The PEL allows now to measure the emissivity of planetary analogue materials from 3- 50 microns for very fine grained samples. We will report here on the next development step of the PEL which is the addition of a planetary simulation chamber. This chamber will allow to measure samples under vacuum and at temperatures up to 500°C. After this upgrade the PEL will be the first lab that can routinely measure the emissivity of fine grained samples from 1 to 50 microns over an extremely wide range of temperatures. The PEL can provide the planetary community already today with emissivity measurements highly complementary to existing spectral databases. With the 2008 upgrade the PEL will allow unique measurements with a strong focus on airless bodies and extreme conditions as for example BepiColombo and MESSENGER will encounter at Mercury. The measurements in the PEL are especially beneficial for MERTIS the thermal infrared imaging spectrometer on BepiColombo. The measurements at 1 micron will in addition allow for the first time a direct interpretation of the surface observations obtained by VIRTIS on VenusExpress through the atmospheric windows.