

How to connect several instruments to a single computer avoiding troubles

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Abstract

In the Experimental Laboratory of Astrophysics of the Universitat Politècnica de València, we have a deposition chamber where ices under astrophysical conditions are produced. We use several instruments to acquire experimental data using commercial software or programmed by us in Labview. These are: a quartz crystal microbalance, double laser interferometer, UV-Vis spectrometer, mass spectrometer, and pressure and temperature sensors. Because each instrument requires a specific operating system and to avoid disruption of an experiment due to the failure of a computer, we use 4 or 5 different computers. This number of computers can produce problems of space, data dispersion and temporal mismatch between them. To avoid these problems, we have created a virtual machine from each computer, and they are hosted on a single computer with two monitors. We have programmed a specific software in Labview to analyze the files obtained by different instruments. The magnitudes we can obtain are: deposited mass, thickness, density, refractive index and enthalpy of sublimation.