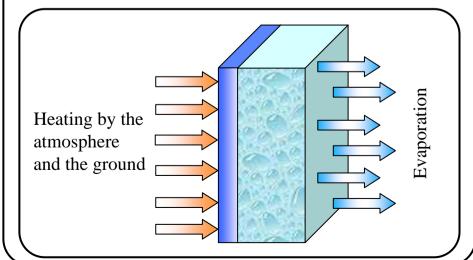
Let's have a floating balloon in the Venus atmosphere

Venus has a thick atmosphere consisting of carbon dioxide. Therefore, it is possible to float a balloon in the atmosphere and to make scientific observation. However, because of the very high temperature and pressure of the atmosphere (740 K and 9 MPa at the ground) it is necessary to predict the heat exchange between the Venus atmosphere and the balloon in order to float the balloon appropriately.

Structure of the balloon

The balloon is the expansion type using the buoyancy generated by steam. The balloon consists of a film resistant to high temperature and high pressure environment, and the balloon contains water inside a porous cloth attached at the inner surface of the film. It will be epoch making if the survey of Venus is successful by use of this type of balloon.



Heat exchange between Venus and a balloon

- 1. Convection from Venus atmosphere
- 2. Radiation from Venus atmosphere and ground
- 3. Radiation from the sun

