

# 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.

## Heat exchange between Venus and a balloon

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

## 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.

