



1 Comparison of the different firn diffusion models of the CRYOSTAT project

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Modelling the gas diffusion in the firn is the basic tool used to reconstruct the long term atmospheric trends of the different species measured in the open pores of the firn. In the frame of the CRYOSTAT project different diffusion models and inverse methods have been implemented to recover the atmospheric evolution from firn air measurements.

These models differs in particular by the way the effective diffusion coefficients are evaluated and these coefficients influence the age and the age width of the different species at the different depths considered.

We will compare the different approaches used to determine the firn tortuosity, used to calculate the effective diffusivities in the different sampling sites of the CRYOSTAT project Then we will compare the resulting Green functions which give the age and the age distribution of the different gas and discuss their influence on the atmospheric trends deduced.