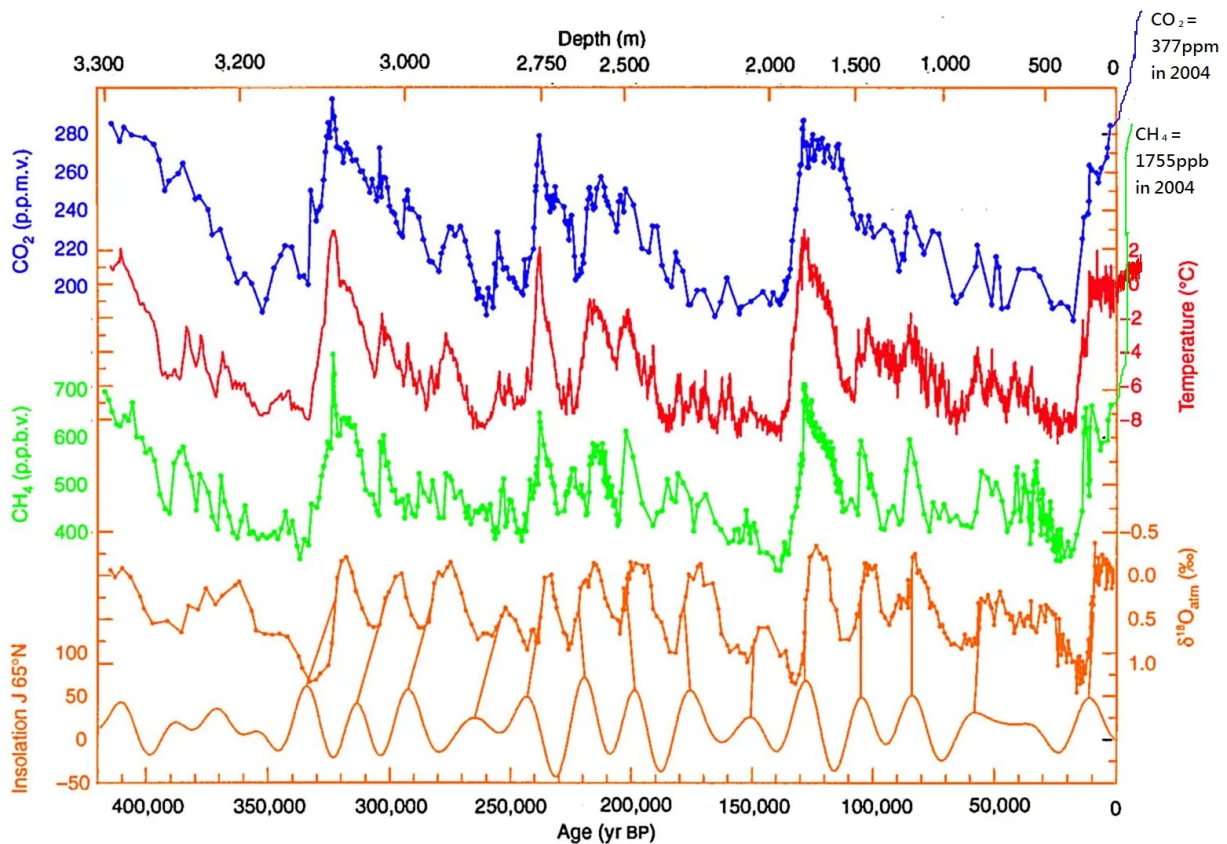


100000-year problem



Data fra Vostok-iskernen i Antarktis: CO₂ (blå), temperatur (rød), metan (grøn) og solindstråling (orange) over de sidste 420.000 år. Istiderne kommer med cirka 100.000 års mellemrum.

US Government (data fra Vostok-iskernen); bearbejdet af Alexchris. Public domain. [Wikimedia Commons](#).

A difference in the actual [glaciation](#) and what would be expected considering the 100,000-year [Milankovitch cycle](#) of [insolation](#).

The [amount of incoming solar radiation](#) varies over time in a [cyclical way](#). With this variation there is normally a corresponding variation in [temperature](#).

These cycles of insolation are caused by variations in the Earth's orbit. There are several cycles. One of around 21,000 years, another of around 40,000 years, and also a longer one of around 400,000 years.

The cycles drive [changes in the climate](#) of the Earth by changing the temperature significantly. These changes in temperature are recognized as a key factor in the determining the beginning and end of an [ice age](#).

For all of the three cycles mentioned above, there is a nice fit between the actual amount of glaciation and the insolation, but for another cycle of around 100,000 years there is not such a nice fit. That is why there is a 100,000-year problem.

By analyzing the [temperature record](#), experts have found that the most significant cycle is the 100,000 year one, but this is a paradox because the variation in the tilt of the Earth's axis and the shape of its orbit, [orbital forcing](#), in this cycle is not very big.

Several theories have been proposed to explain the 100,000-year problem, but there is no general agreement among experts on which theory is the right one. More data from ice cores is becoming available and there is hope that these will help to solve the problem.

The 100,000-year cycle has only dominated the climate during the past million years. This fact contributes to the difficulty in explaining the paradox.

Sådan henviser du til opslaget

Klimaleksikon: "100000-year problem". climate-encyclopedia.com/100000-year-problem, hentet 15. oktober 2026.

Klimaleksikon er gratis og uden login.