

Climate System II - Exercise #4

(1) Present-day CO₂ emissions

You want to transport all carbon contained in the present-day CO₂ emissions with a coal train. Let's assume that 1 railway wagon is approx. 18m long and can contain approx. 100 tonnes of coal

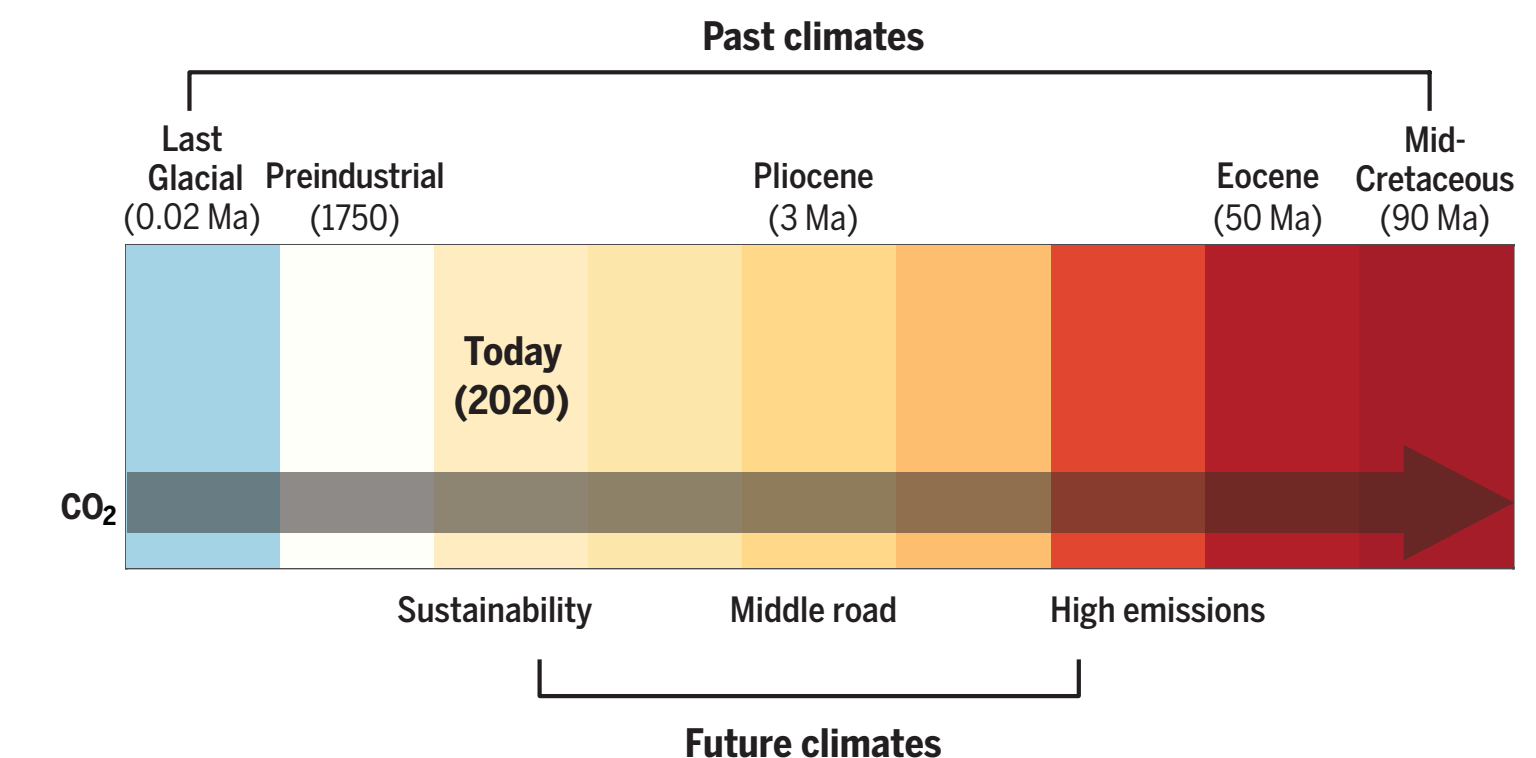
How long would a coal train be if it has to transport the carbon stored in 37.5 Gt CO₂?



(2) Analogies of past and future climates

Study the review paper „Past climates inform our future“ by Tierney et al. (Science, 2020). Briefly answer the following three questions:

- Which past climates had similar atmospheric CO₂ concentrations as assumed for a future SSP1-2.6 and SSP5-8.5 scenario?**
- What are the paleoclimate constraints on Earth's equilibrium climate sensitivity (ECS)? What implications might this have for the future?**
- Which aspect of the article did you find most interesting?**



[Tierney et al., Science, 2020]