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Some key messages from the 6 th IPCC Synthesis Report

Biography. Gerhard Krinner is a CNRS senior scientist working in Grenoble. Physicist by training, he is a global climate modeler focusing on polar climate, in particular on aspects of past, present and future polar climate change that have global consequences. He has carried out longer research stays in Melbourne, Paris, Potsdam and Victoria (BC), and participated to research expeditions in Antarctica. He has published about 150 peer-reviewed papers on topics such as ice sheet mass balances (which impacts the global sea level), the permafrost carbon feedback (which could potentially amplify future climate change), and seasonal snow cover (which influences the Earth's energy budget). In the past, Gerhard Krinner has led the Climate and Cryosphere core project of the World Climate Research Programme (WCRP), and has participated to the 5th and 6th assessments of the Intergovernmental Panel on Climate Change (IPCC). In the 6th IPCC cycle, he has coordinated a section of the Technical Summary of the report on physical climate changes (published in August 2021), and he is currently coordinating the section on long-term changes of the Synthesis Report, the final product of this report cycle to be published in March 2023.

Abstract. The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change. It provides regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation. Acknowledged as authoritative source of scientific information by all countries, the IPCC reports are the scientific basis for international negotiations on issues related to climate change. The reports are written by several hundreds of internationally recognized, actively publishing scientists in the domain. The 6 th assessment cycle (2015-2023) consists of 3 Special Reports, 3 Working Group Reports, and a final Synthesis Report (to be published in March 2023), together building on the analysis of about 70000 scientific publications. The IPCC Working Group Reports published in 2021 and 2022 have clearly shown that climate change has unfolded as predicted by the scientists already more than 50 years ago and is now a pressing reality, and that the human responsibility in the ongoing changes is beyond any reasonable doubt. But they have also shown that ambitious climate action can allow us to limit future climate change. From my viewpoint as a physical climate scientist, I will briefly present overarching key findings of the Synthesis Report that aims at bringing together the main findings of the 6 the assessment cycle, including knowledge on risks related to climate change and options for adaptation and mitigation.