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Next generation terrestrial monitoring and the role of FLUXNET

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In this presentation I will give an overview about the past and future development of global monitoring with special reference to the carbon cycle. Crucial in this context has been the co-evolution of different observation systems from space and on the ground that have achieved almost an order of magnitude higher precision over the past decades. These observation systems include landsurface satellite remote sensing that has evolved strongly since the first AVHRR sensor, atmospheric CO2 concentration measurements and eddy covariance fluxtowers, that start to provide strong insight into the global carbon cycle, being deployed as a global network. I will discuss here the future synergistic use of those data sources for global carbon monitoring. Most importantly, in the future more strategies have to be developed to jointly exploit those data sources together acting as multiple constraints. As a prerequisite however, if we want to understand global change more deeply at different time-scales, these observation systems have to continue for several decades.