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Contribution of inorganic C to the CO_2 efflux from a forest soil on dolomite bedrock

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Weathering of carbonate bedrock (limestone, dolomite) contributes to the CO_2 efflux from the soil. To understand the C-cycling of forests on carbonate bedrock, it is necessary to account for this inorganic C flux. Generally, the inorganic contribution to the soil CO_2 efflux is thought to be small or neglectable, but attempts to quantify the inorganic CO_2 efflux are rare and sometimes complicated because of methodological problems. We used the distinctive isotopic composition of CO_2 from the different sources (dolomite weathering, respiration by decomposing microbes) to quantify the inorganic flux. Mesocosms filled with undisturbed soil and underlying dolomite gravel were incubated under constant temperature and different moisture levels. The whole laboratory experiment was executed under exclusion of atmospheric CO_2 in order to avoid interference with its isotopic signal. First data indicate a $< 2\%$ contribution of inorganic C to the total CO_2 efflux from our soil. Further results of this long-term incubation experiment will be presented at the conference.