



Carbon storage potential of a temperate mountain grassland as affected by management: a combined experimental and modeling analysis

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Here we present seven years of CO₂ flux and carbon content data obtained at a temperate mountain meadow in the Stubai Valley (Austria). Using these data in conjunction with a simple ecosystem carbon flux and pool model we investigate the role of management (cutting and organic fertilizer application) on the potential of the investigated grassland to store carbon in the soil. It is shown that during the past seven years the investigated grassland was approximately carbon neutral. In a further step, the model is used to explore management options (timing and frequency of cutting, organic fertilizer application) under current and likely future climatic conditions which may help at increasing soil carbon storage at this site without compromising on the agricultural yield.