



A year in the life of H₂ and CO at Weybourne Atmospheric Observatory, UK.

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With the potential of a future hydrogen fuel economy looming it has become apparent that our understanding of the current processes governing the H₂ cycle is limited. Thus any negative effects resulting from increasing atmospheric H₂ are somewhat ambiguous. To further understand the cycling of H₂ and CO in the atmosphere we present a 12 month times series of atmospheric measurements of H₂ and CO made at Weybourne Atmospheric Observatory (UK) as part of the EU funded EuroHydros project. We discuss various diurnal and seasonal features in H₂ and CO and compare these with both chemical and physical parameters routinely measured at Weybourne Atmospheric Observatory. In particular we emphasise observed nocturnal decreases in H₂ associated with nocturnal inversion events detected using SODAR technology. Using this we estimate the dry deposition velocity of H₂ and CO to the soil, a substantial sink term in both H₂ and CO budgets. An increased understanding of this soil sink of H₂ and CO will aid in improving its application in global models.