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Soil compaction and structural morphology under tractor wheelings

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Compaction of cultivated soils is a major problem for agriculture in terms of yield decline and sustainable soil resource management. Tramline wheelings exacerbate runoff and increase erosion from arable land. The UK Department for Environment, Food and Rural Affairs (Defra) LINK Project - a joint venture between agri-business, land managers and research groups - is currently evaluating a number of methods for alleviating compaction in tractor wheelings across a range of soil types in England. Using innovative applications of agri-geophysics (e.g. ground penetrating radar, electrical resistivity, acoustics and x-ray tomography), this current project aims to determine relationships between properties derived from geophysical methods (e.g. soil moisture, porosity), soil compaction and structural morphology. Such relationships are important for a clearer understanding of hydrological and biogeochemical processes in compacted soils, to address land management practices and develop cost-effective mitigation measures. Our poster will present some early results of this study.