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Similarity of water movement in porous media under the conditions of microgravity and hydrophobicity

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A water infiltration rate into soil or porous media is reported to be slower in microgravity than on the earth with 1G (Jones and Or, 1999) as well as for hydrophobic soils (DeBano, 1971). Water characteristic curves under the microgravity condition (Heinse et al., 2007) and for hydrophobic soils (Bauters et al., 2000) very much look alike little changes in matric potential with various water contents. For hydrophobic soils (Bauters et al., 2000), the water contact angle becomes larger as well as under microgravity for larger droplets (Brutin et al., 2009). We thought that the contact angle might play the key role for water infiltration under microgravity. We will discuss more on this matter from the view point of similarity between microgravity and hydrophobicity at the minisymposium.

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