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InSAR troposphere delay corrections from numerical weather models - status quo and future directions

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Numerical weather models offer the possibility to compute corrections for a variety of space geodetic applications, including remote sensing techniques like interferometric SAR. Although numerical weather models have been improved over the last years concerning spatial and temporal resolution, the question remains to which extent such information can be used to remove atmospheric signatures in the InSAR images. Based on recent studies from the authors, it will be discussed how troposphere delays corrections should be computed from numerical weather models. Moreover, it will be shown to which extent these models are capable to remove the artifacts in the images and how well such models agree with other independent measurements which provide troposphere delays. Since GPS derived troposphere delays have been recently used in other studies, the consideration of this information will be discussed as well. The presentation will conclude with an outlook on future correction approaches, based on numerical weather models which are calibrated by local measurements to provide utmost accurate troposphere delay corrections for InSAR processing.