

# PULSED-BEAMS MIGRATION WITH WINDOWED RADON TRANSFORM FRAMES

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## ABSTRACT

In this paper, we present a novel migration formulation using pulsed-beams. Our method is based on the phase-space pulsed beam summation method. In this formulation, we use pulsed-beams to expand the surface field and propagate it into the subsurface. A unique property of this method is obtained from the pulsed-beams excitation amplitudes. They are obtained by applying a local version of the  $\tau - p$  transform or "local slant-stack transform". Thus, the proposed migration formulation utilizes the advantages of the  $\tau - p$  transform, which has been explored in the context of seismic migration. Combining this property with the locality property of the pulsed-beams, we obtain a novel migration formulation that reduces the number of backpropagation operations needed to form a good image. Finally, we show a relation between the beam amplitudes and the subsurface properties by using a physical model. Thus, we can further reduce the number of backpropagation operations needed for imaging and only consider the relevant data required to form a good image.structures.