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Discrete Array Representation of Continuous Space-time Source Distributions

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 [Keywords](#)
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Abstract: We consider the realization of a continuous space-time source distributions using a sparse non-uniform point-source array. The construction determines the largest possible cells corresponding to the local source parameters in order to obtain a sparse array, while meeting an error criterion on the pulsed radiation pattern. The scheme is applied for the realization of collimated short-pulse beam fields. The error criterion is imposed within the main beam direction, while outside this region the relative realization error can be large but it is negligible since the field there is small compared to the main beam field.

Key Words: slant stack transform, ultra-wide band short-pulse signals, continuous space-time source distribution, sparse non-uniform point source array

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