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Univ. Height, 323 Dr. M. L. King Jr. Blvd, Newark, NJ 07102, and **Xavier Antoine** and
Christophe Geuzaine. *Quasi-Optimal Convergence of Non Overlapping Domain Decomposition
Method: the Helmholtz Equation.*

In this talk, we present a new non overlapping domain decomposition method where the transmission conditions are defined using suitable representation of Dirichlet to Neumann operator. Following a general overview of the method, we explain the approximation procedure of these operators and discuss convergence properties of the iterative method. Numerical results, both in 2D and 3D, are presented and show that the effective convergence is quasi-optimal. (Received September 13, 2010)