

# Linear Sampling Method for Heat Equation

Gen Nakamura

*Department of Mathematics, Inha University, Incheon 402-751, Korea*

Corresponding Author : Gen Nakamura, 213028@inha.ac.kr

## ABSTRACT

The linear sampling method (LSM) is the most well known non-iterative inversion scheme to identify the medium discontinuities such as cracks, cavities and inclusions in a medium. So far the LSM has been developed mostly for static or stationary measurements which use electric current, heat flux and wave. As for the dynamical measurement there are very few studies on the LSM. Some preliminary studies were done for the heat equation by me and my collaborators ([2]), and also for the wave equation by others ([1]). In this talk we will consider the LSM for the heat equation and present my previous result and some of its further developments ([3]).

## REFERENCES

1. Q. CHEN, H. HADDAR, A. LECHLEITER, P. MONK, *A sampling method for inverse scattering in the time domain*, Inverse Problems 26(2010), no. 8, 085001, 17 pp.
2. H. HORST, G. NAKAMURA, H. WANG, *Linear sampling method for identifying cavities in a heat conductor*, Inverse Problems 28(2012), no. 7, 075014, 14 pp.
3. G. NAKAMURA, H. WANG, *Linear sampling method for the heat equation with inclusions*, Inverse Problems 29(2013), no. 10, 104015, 23 pp.