

Kunze, H.; Crabtree, D.

Using collage coding to solve inverse problems in partial differential equations. (English)

[Zbl 1107.65099](#)

Kotsireas, Ilias S. (ed.), Maple conference 2005. Proceedings of the conference, Waterloo Ontario, Canada, July 17–21, 2005. With the assistance of Ian J. Sinclair, James Duketow, Robert M. Kalbfleisch. Waterloo: Maplesoft (ISBN 1-894511-85-9/pbk). 319-330 (2005).

Summary: Collage coding attempts to solve inverse problems by finding a system with fixed-point close to a target solution or observed data. The method can prove useful in model identification and parameter estimation. Collage coding is discussed in general, and we develop a collage coding framework for treating inverse problems for systems of first-order linear partial differential equations. We supply the reader with easily modifiable source code for the maplet which we have used to treat our example.

For the entire collection see [[Zbl 1099.65002](#)].

MSC:

[65N21](#) Numerical methods for inverse problems for boundary value problems involving PDEs

[35F05](#) Linear first-order PDEs

[35R30](#) Inverse problems for PDEs

Cited in **5** Documents

Keywords:

[parameter estimation](#); [systems of first-order linear partial differential equations](#)

Software:

[Maple](#); [Maplet](#)