The multichannel analysis of surface waves (MASW) method was originally developed at the Kansas Geological Survey (KGS) during the mid-1990s. Each new version of our software includes components used in our most current research. SurfSeis is a living group of code that we are proud to provide as a product of our research. The following are the most significant new features we bring to you in SurfSeis 5 (the standard software—without any of the optional modules—is known as v5.0):

Main

1) Varying elevations and maximum-depth 2-D imaging
   a) For initial models and inversion results
      i) Varying maximum-depth
      ii) Varying elevations
   b) From *.LST files produced by inversions with or without elevation information.
      i) Import elevation information to new and old processed data (i.e., list files) and obtain new look at 2-D images and information.
   c) From 3-column .txt and .grd files with varying elevation and depth.
2) High-resolution Linear Radon Transform (HRLRT) (if chosen as an optional module), now available for
   a) Single record processing (useful for initial testing) and
   b) Passive-data dispersion curve imaging.
3) Expanded Modeling and Random Inversion on dispersion curve images (a.k.a. frequency - velocity spectrum) using up to 20 layers and input from .lst results. Applicable for Rayleigh and optional for Love waves.
4) Scholte-wave (a.k.a., underwater MASW). Scholte-wave modeling on dispersion curve images, random and deterministic (i.e., regular) inversion offered for beta testing.
5) Improvements based on input of previous versions, including:
   a) More flexible coordinate input for passive data.
   b) Save all dispersion-curve images at once.
   c) Constant maximum-depth model estimated from average maximum-depth with each dispersion curve.
   d) Full-spread and half-spread line guides displayed during dispersion-curve picking.
   e) Show 2-trace spread aliasing velocities (useful with SASW approach).
6) Love-wave modeling and inversion (if chosen as an optional module). Love-wave developments include dispersion-curve values modeling on dispersion-curve images, random and deterministic (i.e., regular) inversion.

Optional versions of SurfSeis 5

a) SurfSeis 5.1. Includes Love-wave modeling and inversion. Love-wave developments include dispersion-curve values modeling on dispersion-curve images, random and deterministic (i.e., regular) inversion. This module is new in SurfSeis 5.

b) SurfSeis 5.2. Includes the HRLRT module.

c) SurfSeis 5.3. Includes both the HRLRT and Love Wave modules.

Check our successful application of both (Ivanov et al., 2015).

Visit http://www.kgs.ku.edu/software/surfseis/publications.html for the Ivanov citation and a listing by topic of some of our other publications.