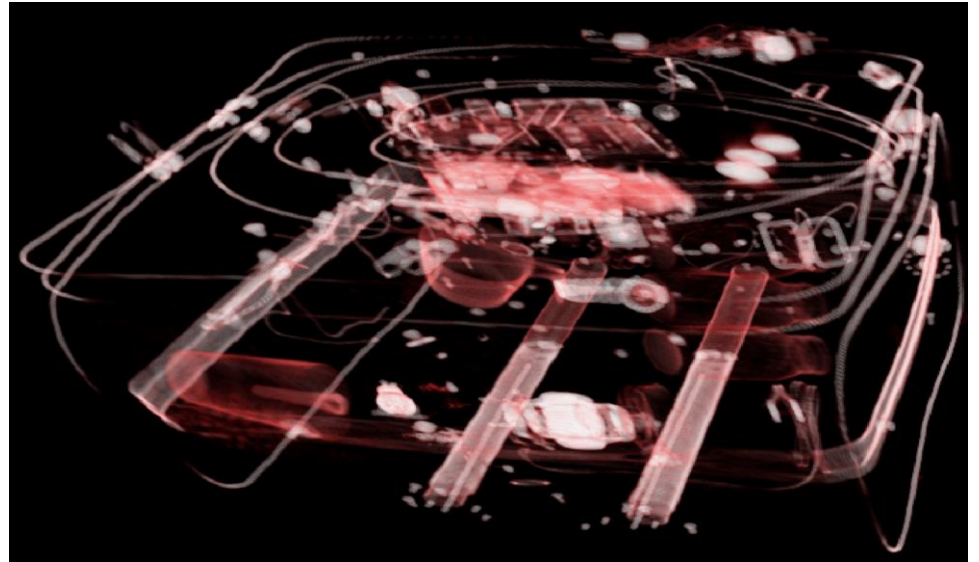
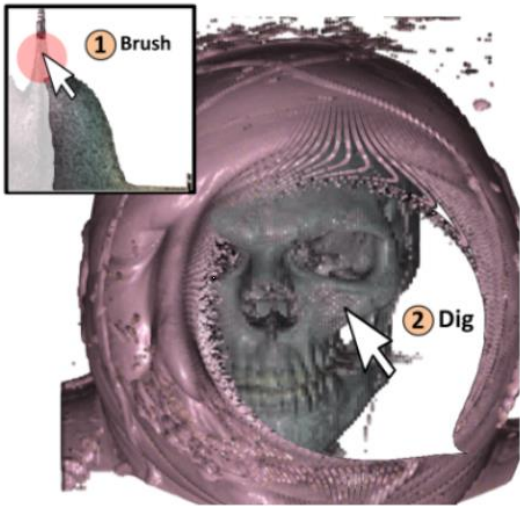


# Color Tunneling

## Interactive Exploration and Selection in Volumetric Datasets



# How to foster innovation?

- Must have application domain expertise
- Be close to the users
- Be close to research units

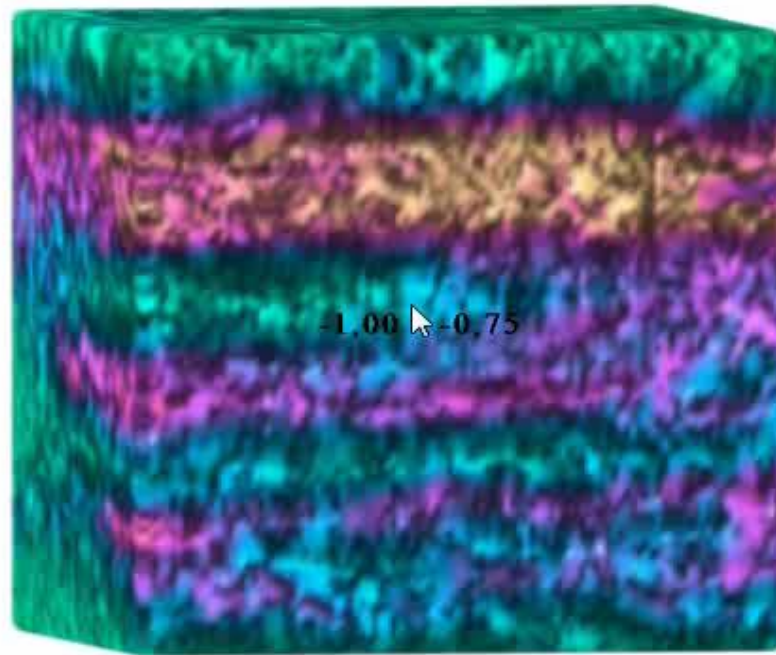
**ColorTunneling** is one example

## Research question

How to deal with large data set  
visualization  
and **data occlusion** ?

## Method

We provide a set of **real-time** multi-dimensional data deformation techniques that aim to help users to easily **select**, **analyze**, and **eliminate** spatial-and-data **patterns**.



C. Hurter, A. R. Taylor, S. Carpendale and A. Telea

**Color Tunneling : Interactive Exploration and Selection in Volumetric Datasets.**

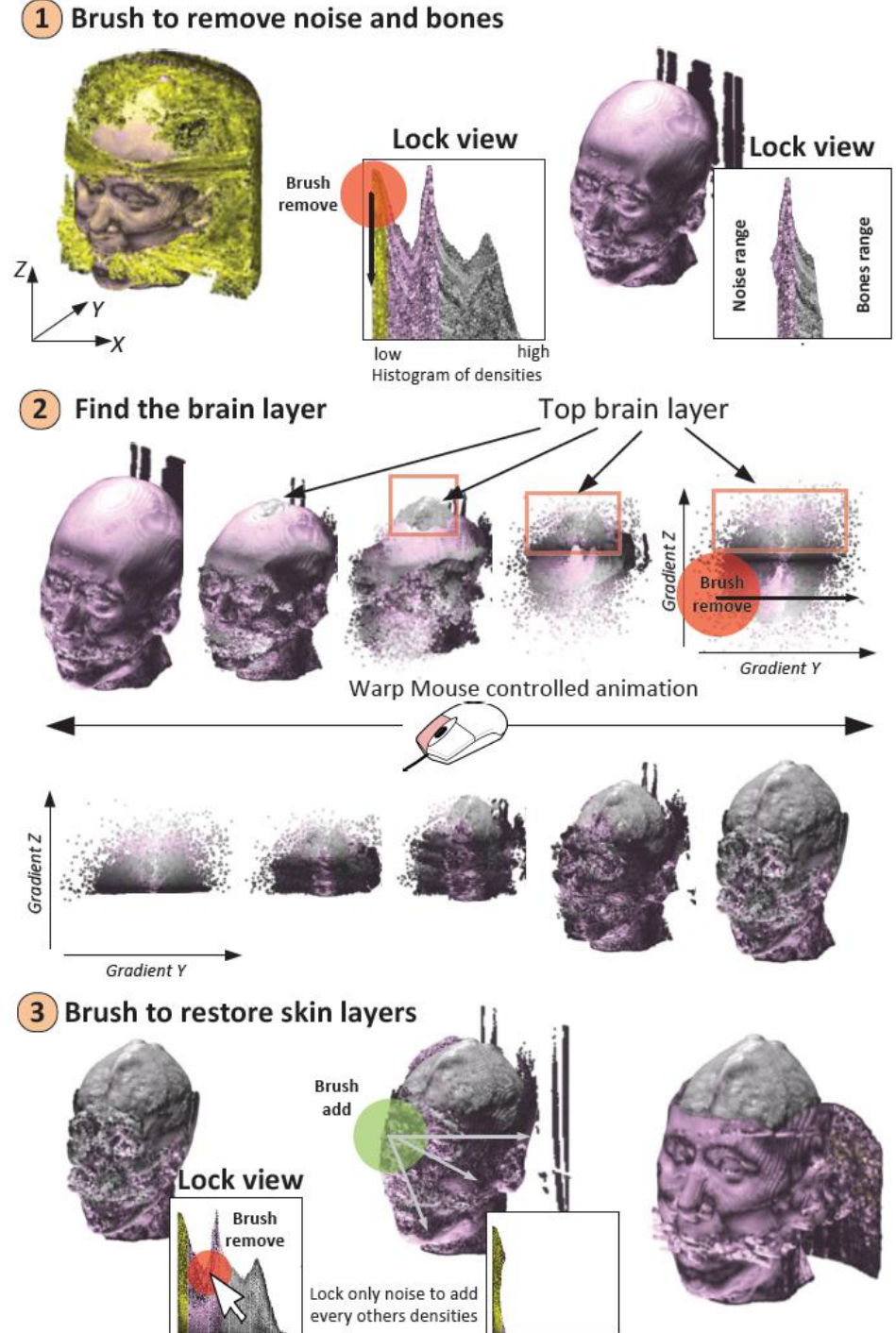
IEEE *PacificVis* 2014

# Design rational

- Real-time multi-dimensional data deformation techniques.
- Animation between view configurations semantic filtering and view deformation.
- Any data subset can be selected at any step along the animation.

Implementation with **pixel based interaction technique** (GPGPU)

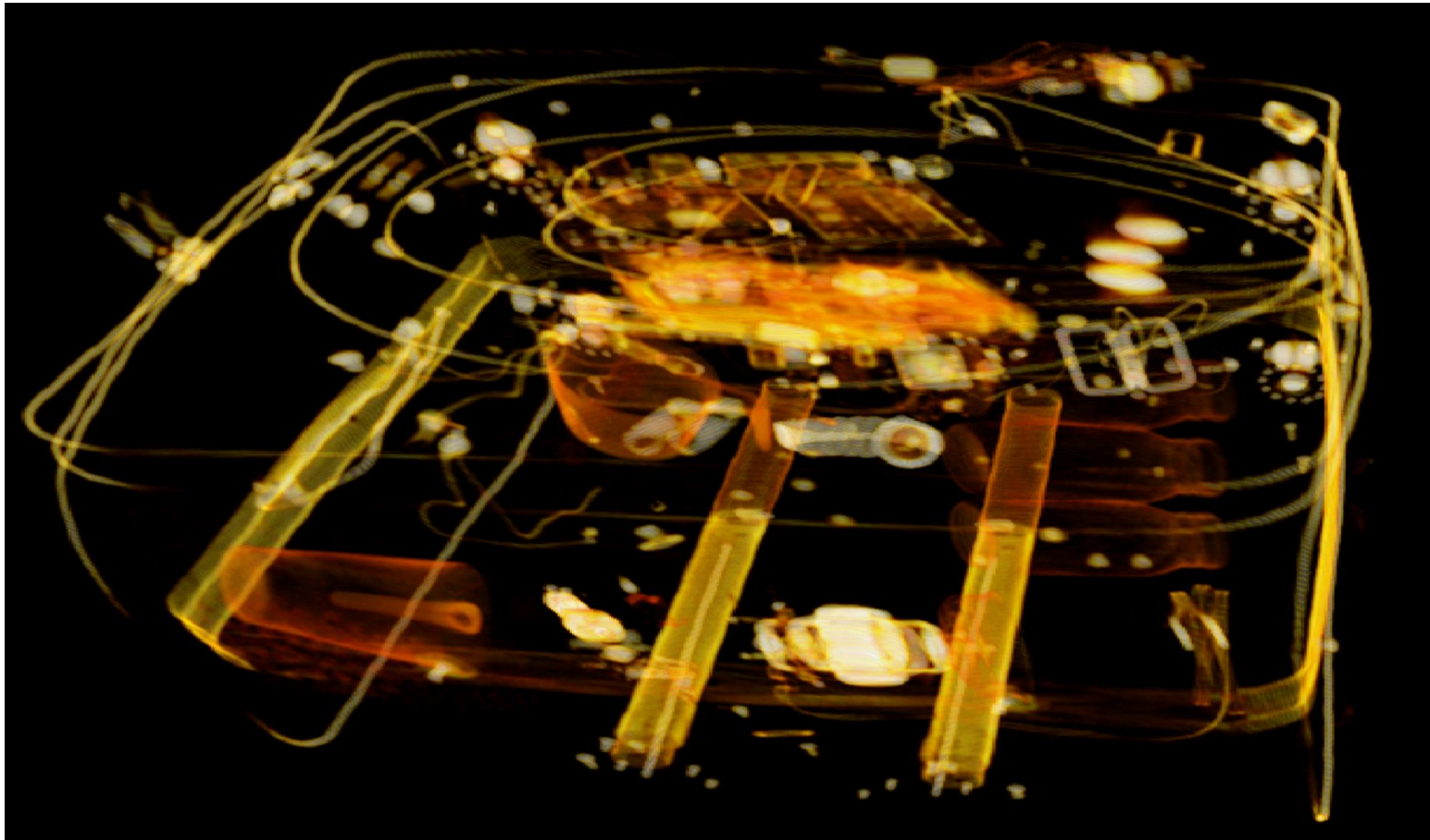
# Use case CT scan exploration





# Security scan

- Instance of usage



# Perspectives

**Training:** ENAC, Aeronautical training school with current 2D tools, in the future 3D tools.

**Academic:** Scientific validation of interactive tools to support volumetric data exploration, future usages with luggage scan

**Industry :** Mutualize effort to support efficient luggage analysis



*ENAC- Ecole Nationale de l'Aviation Civile*  
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