**2D Caustic Skeleton II:**

**Constraint Realization of the Cosmic Web**

1. Introduction
2. Caustic Skeleton by example:

the emergence and evolution of a filament

1. Constrained field theory and formalism
   1. Linear constraints
   2. Nonlinear constraints
2. Caustic skeleton:

nonlinear constraint formalism and realizations

1. Numerical analysis of a cusp and filament realization
2. Conclusion & Discussion
3. Primordial Perturbations:
   1. primordial density field
   2. Fourier space and Power spectrum
   3. Scale space
4. Statistical properties of the Caustic Skeleton:
   1. Lagrangian space
   2. Eulerian space
   3. late time cosmic web: the caustic skeleton evolved
5. Topology of the Cosmic Web:

Morse-Smale complex & Deformation field

* 1. Density field Morse-Smale complex
  2. Deformation field Morse-Smale complex
  3. Scale-space and Multi-scale topology

1. Conclusion and Discussion