**Ocean Science
Discussions**

## *Interactive comment on* "Extraction of spatial-temporal rules from mesoscale eddies in the South China Sea Based on rough set theory" *by* Y. Du et al.

**Anonymous Referee #2**

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Using one modified rough set theory merged with NLOM data including SSH, SST and surface current speed, the authors investigated the theory's availability/advantage, and spatial-temporal distribution of mesoscale eddies in the South China Sea (SCS). This is an innovative interesting try to borrow the way to oceanography. Though the criticisms are listed below, I recommend its publication when they respond them properly.

Major comments

1) P5 L10 From the rough set theory used by Authors, I think the way may be practicable. However description of the way need still be improved. In the section, the description need be refined and modified in order to make it comprehensible. And data

description should be moved from Section 3 (Results P11 L10) to the Section 2 (Data and Methods).

2) In Section 4, Discussion is too short, which look like introduction. Actually you mixed some of discussion to section 3 (Results). Please separate it from Results 3. The merit of your work should be discussed based on previous works: what they discovered, what ways they used, and why your way can get better results, et al. In addition, though you stated the way is better than others', you didn't discuss the drawback and ways used in previous studies.

3)P20: Of section 5, the last paragraph (Line 21-33) isn't conclusive, but discussional. Suggesting put it in Section 4 (Discussion).

4) In the MS, new evidence wasn't presented for the dynamic mechanism of Eddies. More previous studies need be introduced and discussed.

Minor comments

1) P1,L1; In the title of the MS, 'Based on ' should be lower-case.

2) P5, L25; 60nm? > nautical miles

3) P6, L8; indiscerniblility? >discernibility

4) P6, L13; Dwith? > D with

5) P8, L12; ware?> were.

6) P9, L20; Hence?> delete the word?

7) P12, L3; high-resolved raw data? >high-resolved data

8) P12, L8; NLOM SSHA derived from AVISO SLA, thus you needn't check its validity by the AVSO data.

9) P14, L10; only following Rule 4? > Rule 3?

10) English needs to be polished and improved. The sentences are understandable, but many small mistakes are.