今後の研究計画(英訳)

In [8],we defined SPOTP as an necessary and sufficient condition for an expansive homeomorphism has a Markov partition. SPOTP is practically weaker condition than POTP. In fact, sofic systems have SPOTP but not POTP among symbolic dynamical systems.

In case of symbolic dynamical systems, the space is totally disconnected. It is also possible to construct an expansive homeomorphism. However, no example of an expansive homeomorphism with SPOTP and without POTP on a manifold is found. It is unknown whether such example exists or not.

Expansive homeomorphisms on compact 2-dimensional manifolds are very restricted, and we can consider that there is no example of homeomorphisms with SPOTP and without POTP. We would like to study the problem that such a homeomorphism exists or not, for 3-dimensional case. We would like to study along W. Thurston's works in 3-dimentional manifolds, and analysis on Riemannian surfaces.

We also have studied about the structure of the space of invariant probability measures for a homeomorphism on a compact metric space. One of our aim is to extend the condition for a homeomorphism to have the unique invariant measure with maximal entropy (equilibrium state).

It is known by R. Bowen that an expansive homeomorphism with specification property has a unique equilibrium state. It is possible to change specification into weak specification property, which is an extension without example. We would like to fine a condition instead of expansiveness, and add the condition on weak specification property or almost weak specification property to show the existence of a unique equilibrium state. The existence of the Haar measure for a compact abelian group convince us the existence of such a condition.