TSUKUBA J. MATH.
Vol. 6 No. 1 (1982). 9—19

ON THE ADJUNCTION SPACES OF FREE L-SPACES AND M_1-SPACES

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A class of free L-spaces is defined by Nagami [7]. This class contains all Lašnev spaces and is contained in the class of M_1-spaces in the sense of Ceder [3]. In this paper, we consider the sum theorem of free L-spaces and the property of being M_1-spaces and free L-spaces of the adjunction spaces. The main results are as follows:

1. Let $Z=X\cup Y$ be stratifiable, where X, Y are free L-spaces and X is a closed set of Z with a uniformly approaching anti-cover in Z. Then Z is a free L-space.
2. The adjunction space $X\cup_f Y$ is a free L-space if X is an L-space in the sense of Nagami [6] and Y is a free L-space.
3. Let $Z=X\cup Y$ be stratifiable, where X, Y are M_1-spaces and X is a closed set with a uniformly approaching anti-cover in Z. Then Z is an M_1-space.
4. The adjunction space $Z=X\cup_f Y$ is an M_1-space if X is a free L-space and Y is an M_1-space.
5. Every closed set of a free L-space has a closure-preserving open neighborhood base.
6. The closed irreducible image of an M_1-space with dim$=0$ is also an M_1-space.

All spaces are assumed to be Hausdorff and mappings to be continuous and onto unless the contrary is stated explicitly. N always denotes the positive integers. As for undefined term, see Nagami [6] and [7], or [4].

A space X is called a *monotonically normal space* if the following (MN) is satisfied:

(MN) To each pair (H, K) of separated subsets of X, one can assign an open set $U(H, K)$ in such a way that

(i) $H\subset U(H, K)\subset\overline{U(H, K)}\subset X-K$ and

(ii) if (H', K') is a pair of separated sets having $H\subset H'$ and $K'\subset K$, then $U(H, K)\subset U(H', K')$.

LEMMA 1 ([4, Lemma 3.1]). *Let X be a monotonically normal space, F a*

Received May 13, 1981.