Zdeněk Frolík Images of uniform measures

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## FOURTH WINTER SCHOOL (1976)

#### Images of uniform measures

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### Zdeněk Frolík

The positive cone  $\mathcal{M}_{U}^{+}(X)$  of the space  $\mathcal{M}_{U}(X)$  of uniform measures has the remarkable property that the topology coin cides with the weak topology (which is  $\mathcal{S}(\mathcal{M}_{U}(X), U_{\mathcal{S}}(X))$ . Si ce  $\mathcal{M}_{U}(X) = \mathcal{M}_{U}^{+}(X) - \mathcal{M}_{U}^{+}(X)$ , uniformly to define the image under a mapping f:  $X \longrightarrow Y$  of a uniform measure such that the res ting measure is uniform, it is enough to extend f to a continuou mapping of  $\mathcal{M}_{U}^{+}(X)$  into  $\mathcal{M}_{U}^{+}(Y)$  such that the obvious extensi is linear. Let  $\mathcal{N}_{U}(X,Y)$  be the set of all f:  $X \longrightarrow Y$  which admit such extension. The basic fact is that  $\mathcal{N}_{U}(X,Y) = \mathcal{M}_{U}(X,Y)$  where

is introduced in the author's Measure-fine uniform spaces, Proc. Measure Conference in Oberwolfach, to appear in Lecture Notes in Math. Just for orientation note that for a continuous boun ded function f on X the following conditions are equivalent:

- (1)  $f \in \mathcal{N}(X, \mathbb{R})$
- (2) I e M (X,R)

(3) For each r > 0, and each  $\mu \in \mathcal{M}_{U}(X)$ , there exist  $\overline{f}$  and  $\underline{f}$  in  $U_{\mathcal{K}}(X)$  such that  $\underline{f} \in \underline{f} \in f$ , and  $|\mu|(\overline{f} - \underline{f}) < r$ .

The text will appear in Seminar Uniform Spaces 1975-6 published by Mathematical Institute of Czech. Acad. of Sciences.

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