1112-20-434 **Paul-Hermann Zieschang*** (zieschang@utb.edu), West University Dr., Edinburg, TX 78539-299. *Hypergroups of cardinality six.* Preliminary report.

Let S be a set, and let μ be a map from $S \times S$ to the power set of S. For any two elements p and q of S, we write pq instead of $\mu(p, q)$ and assume that pq is not empty.

For any two non-empty subsets P and Q of S, we define the *complex product* PQ to be the union of the sets pq with $p \in P$ and $q \in Q$. If one of the two factors in a complex product consists of a single element s, we write s instead of $\{s\}$ in that product.

Following (and generalizing) Frédéric Marty's terminology we call S a *hypergroup* (with respect to μ) if the following three conditions hold.

1. For any three elements p, q, and r in S, we have $p(qr) = (pq)r$.

2. The set S contains an element e such that $se = \{s\}$ for each element s in S.

3. For each element s in S, there exists an element s^* in S such that $p \in rq^*$ and $q \in p^*r$ for any three elements p, q, and r in S satisfying $r \in pq$.

We give an overview of hypergroups with six elements containing a closed subset with two elements. (Received August 10, 2015)