There are several ways to generalize hamiltonian cycles for \( k \)-uniform hypergraphs, \( k \geq 3 \). We consider such generalization (which is called hamiltonian-chain) introduced in [1], which is probably the strongest one. Namely,

**Definition 1** A cyclic ordering \((v_1, v_2, \ldots, v_n)\) of the vertex set of a hypergraph \( H \) is called a hamiltonian chain if and only if for each \( 1 \leq i \leq n \), \( \{v_i, v_{i+1}, \ldots, v_{i+k-1}\} =: E_i \) is an edge of \( H \).

We say that a hypergraph \( H \) is hamiltonian chain saturated if \( H \) does not contain a hamiltonian chain but by adding any new edge we create a hamiltonian chain in \( H \). An open problem of G.Y. Katona [2] is to determine the right order of magnitude for the size of smallest \( k \)-uniform, \( k \geq 3 \), hamiltonian chain saturated hypergraphs. We solve this problem by proving that the order is \( n^{k-1} \).

**Keywords:** saturated hypergraph, hamiltonian cycle, hamiltonian chain.  
**AMS Subject Classification:** 05C35.

## References
