

İSTANBUL ANALYSIS SEMINARS

WEAK FILTER CONVERGENCE FOR UNBOUNDED SEQUENCES

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Abstract: Let H be an infinite-dimensional separable Hilbert space. A weakly convergent sequence must be bounded but, say, a weakly statistically convergent sequence $h_n \in H$ can tend to infinity in norm. This effect induces the following natural question:

If a sequence has a weak limit with respect to a given filter \mathcal{F} , how quick can the norms of the elements in the sequence tend to infinity?

Of course the answer depends on filter. In this talk we mostly concentrate our efforts on the statistical convergence filter and on its direct generalization – the Erdős-Ulam filters. Some general results are also given.

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