# INVARIANT BANACH LIMITS

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ABSTRACT. A linear functional $B \in l_\infty^*$ is said to be a Banach limit if $B(1,1,...) = 1, B > 0$ and $B(Tx) = Bx$ for any $x \in l_\infty$ where $T$ is the translation operator, that is $T(x_1, x_2, ...) = (x_2, x_3, ...)$. We present a set of easily verifiable sufficient conditions on an operator $H \in L(l_\infty)$, guaranteeing the existence of a Banach limit $B$ s. t. $B = BH$. We apply our results to the classical Cesaro operator. We present another application to geometry of non-separable Banach spaces.
Joint work with F. A. Sukochev (Sydney University,Australia).