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Eugen A Ghenciu* (ghenciue@uwstout.edu) and **Simon Baker**. *Dynamical properties of S -gap shifts and other shift spaces.*

We study the dynamical properties of certain shift spaces. To help study these properties we introduce two new classes of shifts, namely boundedly supermultiplicative (BSM) shifts and balanced shifts. It turns out that any almost specified shift is both BSM and balanced, and any balanced shift is BSM. However, as we will demonstrate, there are examples of shifts which are BSM but not balanced. We also study the measure theoretic properties of balanced shifts. We show that a shift space admits a Gibbs state if and only if it is balanced.

Restricting ourselves to S -gap shifts, we relate certain dynamical properties of an S -gap shift to combinatorial properties from expansions in non-integer bases. This identification allows us to use the machinery from expansions in non-integer bases to give straightforward constructions of S -gap shifts with certain desirable properties. We show that for any $q \in (0, 1)$ there is an S -gap shift which has the specification property and entropy q . We also use this identification to address the question, for a given $q \in (0, 1)$, how many S -gap shifts exist with entropy q ? For certain exceptional values of q there is a unique S -gap shift with this entropy. (Received August 19, 2015)