1145-46-2717 **Laszlo Zsido*** (`zsido@axp.mat.uniroma2.it`), Departimento di Matematica, Universita di Roma "Tor Vergata", Via Della Ricerca Scientifica 1, 00133 Roma, Italy. *A quantitative BT-theorem and applications.*

The classical "BT-Theorem" of Murray and von Neumann states that if M is a von Neumann algebra on a Hilbert space H, and $\xi\,,\eta$ are vectors in H such that η belongs to the closure of $M\xi$, then $\eta = bT\xi$ where $b \in M$ and T is a densely defined, closed linear operator affiliated to M. It can be extended to sequences in $\overline{M\xi}$ as follows:

If $(\eta_k)_{k\geq 1}$ is a sequence in $\overline{M\xi}$ such that

$$\sum_{k=1}^{\infty} \|\eta_k\|^2 < +\infty\,,$$

then

$$\eta_k = b_k T\xi\,, \qquad k \geq 1$$

where T is a densely defined, closed linear operator affiliated to M and $b_k \in M$ can be chosen such that $\lim\limits_{k\to\infty} \|b_k\| = 0\,.$

The above extended "BT-Theorem" can be applied to the proof of automatic continuity results in fairly general situations.

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