

## BCR ALGORITHM AND THE $T(b)$ THEOREM

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*Abstract*

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We show using the Beylkin-Coifman-Rokhlin algorithm in the Haar basis that any singular integral operator can be written as the sum of a bounded operator on  $L^p$ ,  $1 < p < \infty$ , and of a perfect dyadic singular integral operator. This allows to deduce a local  $T(b)$  theorem for singular integral operators from the one for perfect dyadic singular integral operators obtained by Hofmann, Muscalu, Tao, Thiele and the first author.

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