

# ANALYSIS SEMINAR

## THE GROTHENDIECK PROPERTY FOR INJECTIVE TENSOR PRODUCTS

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Abstract : *Let  $X \check{\otimes}_\varepsilon Y$  denote the injective tensor product of Banach spaces  $X$  and  $Y$ . (a) Suppose that either  $X^*$  or  $Y^*$  has the Radon-Nikodym property and that either  $X^{**}$  or  $Y^{**}$  has the approximation property. If both  $X$  and  $Y$  have the Grothendieck property and each continuous linear operator from  $X^*$  to  $Y^{**}$  is compact, then  $X \check{\otimes}_\varepsilon Y$  has the Grothendieck property. (b) Suppose that  $X$  is a reflexive space with an unconditional finite dimensional decomposition and  $Y$  has the Grothendieck property. Then  $X \check{\otimes}_\varepsilon Y$  has the Grothendieck property if and only if each continuous linear operator from  $Y^*$  to  $X$  is compact.*