

Conjectures, counterexamples and A. Grothendieck

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Abstract. My goal in this talk, which is still work in progress, is to study a conjecture presented by Grothendieck in his thesis. He stated that previous results obtained (in his thesis) “suggèrent la conjecture suivante: Soient E et F deux espaces localement convexes tels que l’application naturelle de $E \hat{\otimes} F$ dans $\mathcal{L}_e(E'_s, F'_s)$ soit un isomorphisme topologique ; est-ce que alors E ou F est forcément nucléaire ? - Je ne connais pas de contre-exemple...”

About 30 years later the conjecture was proved to be false in two papers (Pisier and John), we will discuss the counterexamples and the different mathematical language employed in each of them.

I have long been interested in studying the role of counterexamples and pathological objects in mathematical understanding and I believe this conjecture is very interesting.