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On Mathematics useful in Quantum Theory (a personal perspective)

Which branches of mathematics are the most important for a physicist working in quantum mechanics? How to foster an interdisciplinary collaboration of a physicist and a mathematician? Basing on personal experience concerning research related to dynamical systems, geometry of convex sets, differential geometry, operator theory, combinatorics, linear algebra, matrix analysis and random matrices I will try to argue that such a collaboration is possible and can be fruitful.