İSTANBUL ANALYSIS SEMINARS

ALL SEPARABLE INFINITE-DIMENSIONAL FRÉCHET SPACES ARE HOMEOMORPHIC

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Abstract: In this talk, the outstanding solution of the famous conjecture/question of Maurice Fréchet, which asks whether l_2 is homeomorphic to s, i.e. the space of all real sequences, posed in 1928 will be given. Following its announcement, certain master mathematicians like Fréchet himself, Bessaga, Klee, Pelczyński have all tried to solve this problem. Actually Mazur announced in 1932 that this conjecture was wrong. We just give the sketches of the affirmative and long proof of R.D. Anderson which was published in 1966. After this result of $l_2 \cong s$ and by utilizing certain results of M. I. Kadec and C. Bessaga & A. Pelczyǹski, the following unbelievable conclusion is now obtained: Any separable infinite-dimensional Banach space and any separable infinite-dimensional Fréchet space are topologically homeomorphic. It is in fact strange that most people working on Functional Analysis do still not know this result. We hope that this result becomes wellknown among the followers of Istanbul Analysis Seminars after this talk.

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