Poincaré Inequality for Abstract Spaces

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The purpose of this talk is to prove the Poincaré type inequality for metric-measure spaces, that is, a metric space with a measure. We introduce a strong version of the doubling property on the metric-measure spaces such that the Poincaré inequality is valid in such spaces. Here, we use the definition of upper gradient in order to the Poincaré inequality (the norm of derivative) makes sense for abstract spaces.