



(X, g) - supru \mathbb{R} sau \mathbb{C} compact, α
 g - tip pe care $U, r \in U$ grad simplu incluzi
 $\lambda_1(t) = \lambda_2(t) \rightarrow \dots$
 (X, g) - supru compact
 $\lambda_1(t) = \lambda_2(t) \rightarrow \dots$
 (X, g) - supru \mathbb{R} sau \mathbb{C} cu 2 cupruri
 $\dots \lambda_1(t), \lambda_2(t) \rightarrow \dots$

Spectrul operatorului diferentiale geometrice definite pe varietati Riemann
 Teorema (-'23) Fie $E \rightarrow M$, $A \in \mathcal{D}(E)$. Atunci $\exists \lambda_1 \in \mathbb{R}$ de la care
 $\forall \lambda \in \mathbb{R}$, $\lambda > \lambda_1$ au ac. nru de v.p. in $I = [\lambda_1, \lambda]$ $\geq \forall \lambda_1(t) \in I \quad \forall t \in M$
 $|\lambda_1(t) - \lambda_2(t)| < \epsilon$

Teorema (-'23) Fie $\lambda_1 \in \text{Spec } \mathcal{D}$ $\exists \epsilon > 0$ at $[\lambda_1 - \epsilon, \lambda_1 + \epsilon] \cap \text{Spec } \mathcal{D} = \{\lambda_1\}$
 Atunci $P_{[\lambda_1 - \epsilon, \lambda_1 + \epsilon]}^{\mathcal{D}} \xrightarrow{\text{iso}} P_{\{\lambda_1\}}^{\mathcal{D}}$
 Mai precis, $P_{[\lambda_1 - \epsilon, \lambda_1 + \epsilon]}^{\mathcal{D}} \in C^{\infty}([0, \infty) \times X)$ \exists se anulaza
 sin seria Taylor la $\lambda_1 - \epsilon, \lambda_1 + \epsilon$

Exempla $H = S^1$, $g = d\theta^2$
 $\mathcal{D} = \frac{d}{d\theta}$, $\text{Spec } \mathcal{D} = \mathbb{Z}$
 $\mathcal{D} = \frac{d}{d\theta} + i$, $\text{Spec } \mathcal{D} = \mathbb{Z} + i$
 $\mathcal{D} = \frac{d}{d\theta} + i \cos \theta$, $\text{Spec } \mathcal{D} = \mathbb{Z} + i \cos \theta$
 $\mathcal{D}(C(S^1)) \rightarrow C(S^1)$

Ipoteza Fieam pe X o sfera sau sfera unitate
 \mathcal{D} - operator diferentiale
 sp. Dintre incluzi de a lungimii lui λ sa fie invariante?
 • P. Bar, '99
 • C. Morosanu, 2008
 • ...

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