Double fibration transforms with conjugate points

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In this talk we discuss the structure of normal operators of double fibration transforms with conjugate points. Examples of double fibration transforms include Radon transforms, d-plane transforms on the Euclidean space, geodesic X-ray transforms, light-ray transforms, and ray transforms defined by null bicharacteristics associated with real principal type operators. We show that, under certain stable condi- tions on the distribution of conjugate points, the normal operator splits into an elliptic pseudodifferential operator and several Fourier integral operators, depending on the degree of the conjugate points.

Bibliography

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