5. Lecture 5

22 February, 2007.

1. (1) Matrices of differential operators
2. (2) Operators on vector bundles
3. (3) Global elliptic estimates
4. (4) Elliptic operators are Fredholm on Sobolev spaces and $\mathcal{C}^\infty$.
5. (5) Index theorem.
6. (6) Self-adjointness, resolvent family, compactness.
7. (7) Discreteness of spectrum; completeness.
8. (8) Homogeneous first order operators with constant coefficients on $\mathbb{R}^n$.
9. (9) Compact manifolds with boundary
10. (10) The b-Sobolev spaces
    - Integral order
    - Mellin transform
    - General real order
11. (11) Radial compactification of $\mathbb{R}^n$.
12. (12) Isomorphism properties of homogeneos elliptic operators (of first order).

References

[1] L. Hörmander, *The analysis of linear partial differential operators*, vol. 2, Springer-Verlag, Berlin, Heidelberg, New York, Tokyo, 1983.