**Jürgen Voigt**
Technische Universität Dresden, Fakultät Mathematik

## On "monotone" convergence of sectorial forms

Let $H$ be a complex Hilbert space, and let $(a_n)$ be a sequence of closed sectorial forms. Suppose that $(a_n)$ is "increasing" in the sense that the sequence $(\mathrm{dom}(a_n))$ is decreasing, and that there exists $\theta \in [0, \pi/2)$ such that $a_{n+1} - a_n$ is sectorial with vertex 0 and angle $\theta$ for all $n \in \mathbb{N}$. Then there exists a limiting form $a$ such that the sequence $(A_n)$ of operators $A_n$ associated with $a_n$ converges to the operator $A$ associated with $a$, in the strong resolvent sense. This result – a generalisation of [3, Theorems 3.1 and 4.1] – is due to Batty and ter Elst [1]. We present a proof along the lines of a proof given in [2, proof of Theorem 5] and also show that Ouhabaz' result follows from [1].

The talk is based on joint work with H. Vogt.

# References

[1] C. J. K. Batty and A. F. M. ter Elst, *On series of sectorial forms*, J. Evol. Equ. **14** (2014), 29–47.

[2] E.-M. Ouhabaz, *Second order elliptic operators with essential spectrum* $[0, \infty)$ *on* $L^p$, Comm. Partial Differential Equations **20** (1995), 763–773.

[3] B. Simon, *A canonical decomposition for quadratic forms with applications to monotone convergence theorems*, J. Funct. Anal. **28** (1978), 377–385.