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Documenting the acoustics of the Silbermann pipe organ at the
Catholic Cathedral in Dresden before and after the restoration of
2002

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Gottfried Silbermann's pipe organ at the Catholic Cathedral of the Saxonian Court in Dresden was, with 47 stops, the largest instrument he had ever built. The instrument was evacuated during World War II and luckily survived intact, while the church itself was badly damaged. The instrument received a more romantic sound ideal after its resurrection in 1971. The biggest deviation from the original concept of Silbermann was the change from church pitch ($A_4=415$ Hz) to chamber pitch ($A_4=440$ Hz). In 2002, the instrument was renovated again with the goal to restore the instrument to the original design of 1755. The work was commissioned to two local organ builders, Kristian Wegscheider and Jehmlich Orgelbau, and the authors received the unique opportunity to measure the instrument before and after the restoration. During the measurements, the pipes of each stop were recorded in the near field in steps of a third. The acoustical comparison between each pipe before and after the restoration shows significant differences that match the informal observations of expert listeners. In general, the pipes received more energy in the higher partials and had a better attack response. Another interesting finding is the improvement of the pipes' formants after the restoration.