

# **Search for Supersymmetry in opposite-sign same-flavour dilepton events with the CMS detector in proton-proton collisions at $\sqrt{s} = 8 \text{ TeV}$**

Von der Fakultät für Mathematik, Informatik und Naturwissenschaften der RWTH Aachen University  
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Dissertation

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# 1 Introduction



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## **2 The Standard Model and its extension to Supersymmetry**



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## **3 The LHC and the CMS Detector**





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## **4 Data triggering and processing**



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## 5 Event reconstruction



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## **6 Dilepton final states in supersymmetric models**



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## 7 Event Selection





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## **8 Estimation of Standard Model backgrounds**



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## 9 Results



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## 10 Systematic Uncertainties



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## **11 Statistical Interpretation**





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## 12 Conclusion