ASIA-PACIFIC
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Instructions to Abstract Authors

2018 Key Dates

Submission of Abstracts due:	**Monday, 16 July 2018**
Notification of abstract selection to authors:	**Monday, 13 August 2018**
Papers due for peer review:	**Monday, 15 October 2018**
Feedback from reviewers to authors:	**Monday, 12 November 2018**
Final paper submission due from authors:	**Monday, 26 November 2018**

Your contribution will not be formally accepted and scheduled, until you have registered your attendance at the conference.

Please indicate by ticking which stream/s best fits your abstract

	STREAMS Topics listed are a guideline only. Submissions in related areas are welcome
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☐	**Deployment & Integration** *Renewables integration, policy and regulation* *Forecasting and Resource assessment* *Minigrids and Community owned Renewables* *Field experience, performance, yield and reliability* *Distributed Energy Resources, EVs and Low emissions transport*
☒	**Solar Heating and Cooling, Low Carbon Living** *Energy Efficiency and Demand Management* *Housing and appliances* *Solar heating and cooling including heat pumps* *Cities and Communities* *Competing with gas in the domestic & commercial market*
☐	**Concentrating Solar Thermal** *Fundamentals and components* *Storage, systems and power cycles* *CSP integration, design and modelling* *CSP and high temperature processing*
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Improving Thermal Comfort Regulating Potential in Naturally Ventilated Residential House

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In New Zealand's (NZ) mild climatic conditions, most residential houses are ventilated naturally, mainly by opening windows. However, maintaining the indoor thermal comfort characteristics of a house by modulating natural ventilation is particularly challenging, as the solution is not explicit. Determining a solution requires solving the complexity, dynamics, and nonlinearity associated with the natural ventilation driving forces and building thermal behavior. However, prior to finding any solution to this effect, the potential of regulating thermal behavior of the building with respect to different operating conditions needs to be examined in detail.

Previous studies have found that there is some scope for regulating the thermal behavior of relatively air-tight house by opening or shutting the window. As such, this work utilises dynamic simulations to examine the variation of thermal comfort, in terms of the Predicted Mean Vote (PMV), of a model house equivalent to a size of a typical room under NZ climatic condition and for various operating conditions. To achieve this, it examines the PMV of the room with various Window Opening Fraction (WOF), different air-tightness values and different level of envelope thermal resistance utilizing coupled thermal and airflow simulations. This work particularly demonstrates that the scope for regulating the thermal comfort behavior of a naturally ventilated residential house improves with relatively insulated envelope.