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**Thermal transport due to liquid jet impingement on superhydrophobic surfaces with isotropic slip: isoflux wall**[1] MATTHEW SEARLE, JULIE CROCKETT, DANIEL MAYNES, Brigham Young University — Thermal transport due to a liquid water jet impinging at an isoflux superhydrophobic surface with isotropic slip was modeled analytically by means of an integral analysis of the transport equations. The resulting system of ordinary differential equations was solved numerically. Impingement on superhydrophobic surfaces greatly reduces the heat transfer that occurs. Local and average Nusselt numbers are presented as a function of radial position (0 to 45 jet radii), jet Reynolds number ($3 \times 10^3$ to $1.5 \times 10^4$), liquid Prandtl number (2 to 11), normalized slip length (0 to 0.2), and normalized temperature jump length (0 to 0.2) and these results are all compared to classical behavior. The no-slip and no temperature jump Nusselt numbers for the isoflux scenario are greater than the corresponding isothermal case. The difference in Nusselt number between these two heating conditions becomes negligible as the temperature jump length increases to quantities realizable on superhydrophobic surfaces undergoing jet impingement.

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