# Appendix C. Literature in the systematic review

**Table C.** Classification of 131 literatureaccording to the author (year), method, scale, climate type, city or region, country, topic and quantitative climate indicator. The topics describe the influencing factors of the trees’ cooling effects, including building morphology (BM), road orientation (RO), tree implementation (TI), sky view factor (SVF), tree density (TD), tree location and arrangement (TL), tree morphology (TM), tree species (TS), LAI and LAD (LD), leaf morphology (LM), leaf stomatal characteristics (LS), soil characteristics (SC).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Authorref | Year | Method | Scale | Climate | City or Region | Country or Region | Topic | ΔTair? Or Other Climate Indicators |
| Zaki et al.1 | 2020 | Measurement | Micro | Af | Kuala Lumpur | Malaysia | RO, TI | Yes |
| Meili et al.2 | 2021 | Simulation | Local | Af | Singapore | Singapore | TI | Yes |
| Meili et al.3 | 2021 | Simulation | Local | Af | Singapore | Singapore | TI | No, UTCI |
| Meili et al.4 | 2020 | Simulation | Local | Af | Singapore | Singapore | TI | Yes |
| Hien and Jusuf5 | 2010 | Measurement | Local | Af | Singapore | Singapore | SVF | Yes |
| Jareemit and Srivanit6 | 2022 | Measurement | Micro | Aw | Pathum Thani | Thailand | SVF, TD | Yes |
| Srivanit and Jareemit7 | 2020 | Simulation | Micro | Aw | Bangkok | Thailand | BM, RO, TD | No, PET |
| Abdulkarim et al.8 | 2020 | Measurement and Simulation | Local | Aw | Bauchi | Nigeria | TD | Yes |

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| Authorref | Year | Method | Scale | Climate | City or Region | Country or Region | Topic | ΔTair? Or Other Climate Indicators |
| Darbani et al.9 | 2023 | Simulation | Local | BSk | Mashhad | Iran | BM, RO, SVF, TD | Yes |
| Darbani et al.10 | 2021 | Simulation | Local | BSk | Mashhad | Iran | BM, RO, TD | No, PET |
| Sodoudi et al.11 | 2014 | Simulation | Local | BSk | Tehran | Iran | TI | Yes |
| Arghavani et al.12 | 2020 | Simulation | Meso | BSk | Tehran | Iran | TD | Yes |
| Yang et al.13 | 2019 | Simulation | Micro | BSk/Cwa | Xian | China | TD | No, PET |
| Yang et al.14 | 2018 | Simulation | Micro | BSk/Cwa | Xian | China | TM, TL | No, PET |
| Zhang et al.15 | 2022 | Measurement | Local | BSk/Cwa | Xian | China | TS | No, UTCI |
| Zhao et al.16 | 2018 | Measurement | Micro | BWh | Tempe | USA | TD, TL | No, Tsur |
| Shata et al.17 | 2021 | Simulation | Micro | BWh | Giza | Egypt | SVF | Yes |
| Elbardisy et al.18 | 2021 | Simulation | Micro | BWh | Cairo | Egypt | TD | Yes |
| Meili et al.2 | 2021 | Simulation | Local | BWh | Phoenix | USA | TI | Yes |
| Fahmy et al.19 | 2010 | Simulation | Micro | BWh | Cairo | Egypt | TS, LD | Yes |
| Zeeshan et al.20 | 2022 | Simulation | Local | BWh | Keamari | Pakistan | TI | Yes |
| Zhao et al.21 | 2018 | Simulation | Local | BWh | Tempe | USA | TL | Yes |
| Wang et al.22 | 2018 | Simulation | Meso | BWh | CA-AZ | USA | TI | Yes |
| Ma et al.23 | 2019 | Measurement | Micro | BWk | Lhasa | China | RO, LD | Yes |
| Ruiz et al.24 | 2015 | Measurement | Micro | BWk | Mendoza | Argentina | BM, TD | Yes |
| Yahia and Johansson25 | 2014 | Simulation | Micro | BWk | Damascus | Syria | BM, RO, TI | No, Tsur |
| Yahia and Johansson26 | 2013 | Simulation | Micro | BWk | Damascus | Syria | BM, RO, TI | No, PET |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Authorref | Year | Method | Scale | Climate | City or Region | Country or Region | Topic | ΔTair? Or Other Climate Indicators |
| Gao et al.27 | 2020 | Measurement | Micro | Cfa | Sydney | Australia | TI | Yes |
| Chen et al.28 | 2021 | Measurement | Micro | Cfa | Guangzhou | China | BM, TD, TM, TS, LD | No, PET |
| Chen et al.29 | 2021 | Measurement | Micro | Cfa | Guangzhou | China | BM, SVF, TD, TS | No, Tair 0.1m |
| Zheng et al. 30 | 2018 | Measurement | Micro | Cfa | Guangzhou | China | TS | Yes |
| Hong et al.31 | 2018 | Measurement | Micro | Cfa | Fuzhou | China | TI | Yes |
| Park et al.32 | 2012 | Measurement | Micro | Cfa | Saitama Prefecture | Japan | TD, TL | No, Tmrt |
| Lin et al.33 | 2010 | Measurement | Micro | Cfa | Taipei | Taiwan China | SVF, TD | No, PET |
| Wang et al.34 | 2023 | Simulation | Micro | Cfa | Hangzhou | China | TD, TM | Yes |
| Feng et al.35 | 2021 | Simulation | Micro | Cfa | Nanjing | China | TL, LD | No, Tsur |
| Lin et al.36 | 2021 | Simulation | Micro | Cfa | Taipei | Taiwan China | RO, TD, LD | Yes |
| Zheng et al.37 | 2018 | Simulation | Micro | Cfa | Shantou | China | BM, RO, TM, LD | Yes |
| Zheng et al.38 | 2016 | Simulation | Micro | Cfa | Guangzhou | China | TS | Yes |
| Cai et al.39 | 2022 | Measurement | Local | Cfa | Hangzhou | China | TD, TM, LD | Yes |
| Alonzo et al.40 | 2021 | Measurement | Meso | Cfa | Washington DC | USA | TD | Yes |
| Razzaghmanesh et al.41 | 2021 | Measurement | Local | Cfa | New Jersey | USA | RO, TD, TM | Yes |
| Sabrin et al.42 | 2021 | Measurement | Local | Cfa | Philadelphia | USA | TI, TD | No, Tmrt |
| Yang et al.43 | 2015 | Measurement | Local | Cfa | Shanghai | China | BM, TD | Yes |
| Chiang et al.44 | 2023 | Others | Local | Cfa | Taichung City | Taiwan China | SVF | No, PET |
| Bartesaghi-Koc et al.45 | 2022 | Remote Sensing | Local | Cfa | Sydney | Australia | SVF, TD | No, LST |
| Chen et al.46 | 2022 | Remote Sensing | Local | Cfa | Nanjing | China | BM, TD | No, LST |
| Xi et al.47 | 2022 | Simulation | Local | Cfa | Nanjing | China | TI | Yes |
| Tan et al.48 | 2022 | Simulation | Local | Cfa | Chenzhou | China | TI | Yes |
| Liao et al.49 | 2021 | Simulation | Local | Cfa | Changsha | China | TI | Yes |
| Zhang et al.50 | 2018 | Simulation | Local | Cfa | Wuhan | China | TD, TM, TL, LD | Yes |
| Jiang et al.51 | 2018 | Simulation | Local | Cfa | Shanghai | China | TL | Yes |
| Srivanit and Hokao52 | 2013 | Simulation | Local | Cfa | Saga | Japan | TD | Yes |
| He et al.53 | 2021 | Remote Sensing | Meso | Cfa | Washington DC | USA | TD | No, LST |
| Loughner et al.54 | 2012 | Simulation | Meso | Cfa | Washington DC | USA | BM, TI | Yes |
| Johansson et al.55 | 2013 | Simulation | Micro and Meso | Cfa | Sao Paulo | Brazil | BM, TI | Yes |

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| Authorref | Year | Method | Scale | Climate | City or Region | Country or Region | Topic | ΔTair? Or Other Climate Indicators |
| Rahman et al.56 | 2020 | Measurement | Micro | Cfb | Munich | Germany | BM, RO, TD, TS | Yes |
| Massetti et al.57 | 2019 | Measurement | Micro | Cfb | Florence | Italy | LD | No, Tsur |
| Rahman et al.58 | 2019 | Measurement | Micro | Cfb | Munich | Germany | TS | Yes |
| Rahman et al.59 | 2018 | Measurement | Micro | Cfb | Munich | Germany | TS, SC | Yes |
| Rahman et al.60 | 2017 | Measurement | Micro | Cfb | Munich | Germany | TS, SC | Yes |
| Sanusi et al.61 | 2017 | Measurement | Micro | Cfb | Melbourne | Australia | TD, TS, LM | Yes |
| Rahman et al.62 | 2017 | Measurement | Micro | Cfb | Munich | Germany | TM, SC | Yes |
| Coutts et al.63 | 2016 | Measurement | Micro | Cfb | Melbourne | Australia | BM, TD | Yes |
| Konarska et al.64 | 2016 | Measurement | Micro | Cfb | Gothenburg | Sweden | BM, SVF, TD | Yes |
| Wang et al.65 | 2015 | Measurement and Simulation | Micro | Cfb | Assen | Netherlands | TI | Yes |
| Lachapelle et al.66 | 2023 | Simulation | Micro | Cfb | Vancouver | Canada | RO, TD, TL | No, Tmrt |
| Bochenek and Klemm67 | 2021 | Simulation | Micro | Cfb | Lodz | Poland | TD | Yes |
| Azcarate et al.68 | 2021 | Simulation | Micro | Cfb | Bilbao | Spain | SVF | No, PET |
| Wang et al.69 | 2021 | Simulation | Micro | Cfb | Basel | Switzerland | TI | Yes |
| Meili et al.2 | 2021 | Simulation | Local | Cfb | Melbourne | Australia | TI | Yes |
| Bochenek and Klemm70 | 2020 | Simulation | Micro | Cfb | Lodz | Poland | TD | Yes |
| Lee et al.71 | 2020 | Simulation | Micro | Cfb | Freiburg | Germany | BM, TD, TM | Yes |
| Manickathan et al.72 | 2018 | Simulation | Micro | Cfb | Parametric, Validation in Varades | Parametric, Validation in France | TD, TM, LD, LM, LS | Yes |
| Napoli et al.73 | 2016 | Simulation | Micro | Cfb | Florence | Italy | TM, TS, LD, SC | No, Tsur |
| Quanz et al.74 | 2018 | Measurement | Local | Cfb | Berlin | Germany | RO, SVF, TD | Yes |
| Klein and Rozova75 | 2016 | Measurement | Local | Cfb | Nitra | Slovakia | BM, TI | Yes |
| Sung76 | 2013 | Remote Sensing | Local | Cfb | Woodlands Township | USA | TI | No, LST |
| Briegel et al.77 | 2023 | Simulation | Local | Cfb | Freiburg | Germany | TI | No, Tmrt |
| Balany et al.78 | 2022 | Simulation | Local | Cfb | Melbourne | Australia | TI | Yes |
| Aminipouri et al.79 | 2019 | Simulation | Local | Cfb | Vancouver | Canada | TD | No, Tmrt |
| Aminipouri et al.80 | 2019 | Simulation | Local | Cfb | Vancouver | Canada | TD | No, Tmrt |
| Morille and Musy81 | 2017 | Simulation | Local | Cfb | Lyon | France | TI | No, UTCI |
| Lee et al.82 | 2016 | Simulation | Local | Cfb | Freiburg | Germany | TI | Yes |
| Lindberg et al.83 | 2016 | Simulation | Local | Cfb | Goteborg | Sweden | TD | No, Tmrt |
| Ketterer and Matzarakis84 | 2015 | Simulation | Local | Cfb | Stuttgart | Germany | TI | No, PET |
| Morabito et al.85 | 2021 | Remote Sensing | Meso | Cfb | Italy | Italy | TD | No, LST |
| Wang et al.22 | 2018 | Simulation | Meso | Cfb | Florida | USA | TI | Yes |
| Wang et al.22 | 2018 | Simulation | Meso | Cfb | Texas Triangle | USA | TI | Yes |
| Meili et al.2 | 2021 | Simulation | Local | Dfb/Cfb | Zurich | Switzerland | TI | Yes |
| Zhao et al.86 | 2023 | Measurement | Local | Dfb/Cfb | Zurich | Switzerland | BM, TD, TM | Yes |

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| Authorref | Year | Method | Scale | Climate | City or Region | Country or Region | Topic | ΔTair? Or Other Climate Indicators |
| Shashua-Bar et al.87 | 2012 | Measurement | Micro | Csa | Athens | Greece | BM, TD | Yes |
| Shashua-Bar et al.88 | 2010 | Measurement | Micro | Csa | Athens | Greece | BM, TD, TS | Yes |
| Gulten et al.89 | 2016 | Simulation | Micro | Csa | Elazığ | Turkey | TI | No, Tsur |
| Thom et al.90 | 2016 | Simulation | Micro | Csa | Adelaide | Australia | TD | No, Tmrt |
| Salata et al.91 | 2015 | Simulation | Micro | Csa | Rome | Italy | TI | Yes |
| Gatto et al.92 | 2020 | Measurement and Simulation | Local | Csa | Lecce | Italy | TD, TS | Yes |
| Segura et al.93 | 2022 | Simulation | Local | Csa | Barcelona | Spain | SVF, TD | Yes |
| Bachir et al.94 | 2021 | Simulation | Local | Csa | Mostaganem | Algeria | SVF, TD | Yes |
| Duncan et al.95 | 2019 | Remote Sensing | Meso | Csa | Perth | Australia | TI | No, LST |
| Eckmann et al.96 | 2018 | Simulation | Micro | Csb | Portland Oregon | USA | TI | Yes |
| Wang et al.22 | 2018 | Simulation | Meso | Csc | Cascadia | USA | TI | Yes |
| Zhang et al.97 | 2022 | Measurement | Micro | Cwa | Zhumadian | China | TD, TM | Yes |
| Ouyang et al.98 | 2021 | Measurement | Micro | Cwa | Hong Kong | China | TI | Yes |
| Cheung and Jim99 | 2018 | Measurement | Micro | Cwa | Hong Kong | China | TI | Yes |
| Wang et al.100 | 2022 | Simulation | Micro | Cwa | Hong Kong | China | TM, TL, TS, LD | Yes |
| Jia and Wang101 | 2021 | Simulation | Micro | Cwa | Hong Kong | China | TI | Yes |
| Raman et al.102 | 2021 | Simulation | Local | Cwa | Patna | India | BM, TD | No, Tmrt |
| Ouyang et al.103 | 2020 | Simulation | Local | Cwa | Hong Kong | China | BM, TD | Yes |
| Tan et al.104 | 2017 | Simulation | Local | Cwa | Hong Kong | China | SVF | Yes |
| Tan et al.105 | 2016 | Simulation | Local | Cwa | Hong Kong | China | SVF | Yes |
| Morakinyo et al.106 | 2020 | Simulation | Micro and Local | Cwa | Hong Kong | China | SVF, TD, TM, LD | Yes |
| Morakinyo et al.107 | 2017 | Simulation | Micro and Local | Cwa | Hong Kong | China | BM, TM, TS, LD | No, PET |
| Yang et al.13 | 2019 | Simulation | Micro | BSk/Cwa | Xian | China | TD | No, PET |
| Yang et al.14 | 2018 | Simulation | Micro | BSk/Cwa | Xian | China | TM, TL | No, PET |
| Zhang et al.15 | 2022 | Measurement | Local | BSk/Cwa | Xian | China | TS | No, UTCI |
| Ballinas and Barradas108 | 2016 | Simulation | Local | Cwb | Mexico city | Mexico | TD | Yes |
| Wang et al.22 | 2018 | Simulation | Meso | Cwb | Northeast | USA | TI | Yes |

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| Authorref | Year | Method | Scale | Climate | City or Region | Country or Region | Topic | ΔTair? Or Other Climate Indicators |
| Ziter et al.109 | 2019 | Measurement | Local | Dfa | Madison | USA | TD | Yes |
| Park et al.110 | 2021 | Remote Sensing | Local | Dfa | Columbus | USA | TD | No, LST |
| Berardi et al.111 | 2020 | Simulation | Micro and Meso | Dfa | Greater Toronto Area | Canada | TD | Yes |
| Wang et al.22 | 2018 | Simulation | Meso | Dfa/Dfb | Great Lakes | USA | TI | Yes |
| Mballo et al.112 | 2021 | Measurement | Micro | Dfb | Angers | France | TI | Yes |
| Speak et al.113 | 2020 | Measurement | Micro | Dfb | Bolzano | Italy | TM, TS, LD | No, Tsur |
| Gillner et al.114 | 2015 | Measurement | Micro | Dfb | Dresden | Germany | TS, LD, LS | Yes |
| Millward et al.115 | 2014 | Measurement | Micro | Dfb | Toronto | Canada | TM, TL, TS, LD | No, Tsur |
| De Luca116 | 2022 | Simulation | Micro | Dfb | Tallinn | Estonia | TD | No, UTCI |
| Wang and Akbari117 | 2016 | Simulation | Local | Dfb | Montreal | Canada | TD, TM, TS, LD | Yes |
| Meili et al.2 | 2021 | Simulation | Local | Dfb/Cfb | Zurich | Switzerland | TI | Yes |
| Zhao et al.86 | 2023 | Measurement | Local | Dfb/Cfb | Zurich | Switzerland | BM, TD, TM | Yes |
| Du et al.118 | 2020 | Measurement | Micro | Dwa | Harbin | China | TI | Yes |
| Jiao et al.119 | 2017 | Measurement | Micro | Dwa | Beijing | China | TL, TS | Yes |
| Li et al.120 | 2020 | Simulation | Micro | Dwa | Harbin | China | SVF | Yes |
| Park et al.121 | 2019 | Simulation | Micro | Dwa | Seoul | South Korea | TI | No, Tmrt |
| Park et al.122 | 2019 | Simulation | Micro | Dwa | Seoul | South Korea | TM, TL | No, Tmrt |
| Hong and Lin123 | 2015 | Simulation | Micro | Dwa | Beijing | China | BM, TL | No, SET |
| Zhang et al.124 | 2023 | Simulation | Local | Dwa | Qingdao | China | TM, TS, LD | No, PET |
| Choi et al.125 | 2021 | Simulation | Local | Dwa | Seoul | South Korea | TD | Yes |
| Wu et al.126 | 2019 | Simulation | Local | Dwa | Beijing | China | BM, TD | Yes |
| Wang and Zacharias127 | 2015 | Simulation | Local | Dwa | Beijing | China | TD, TM | Yes |
| Tien et al.128 | 2021 | Simulation | Micro | None | None | None | TD, TL | Yes |
| Yang et al.129 | 2022 | Remote Sensing | Meso | None | None | None | TI | Yes |
| Marando et al.130 | 2022 | Remote Sensing | Meso | None | Europe | Europe | TI | Yes |
| Wang et al.131 | 2019 | Remote Sensing | Meso | None | USA | USA | TI | No, LST |

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