

1 Geometry and LST maps for cities

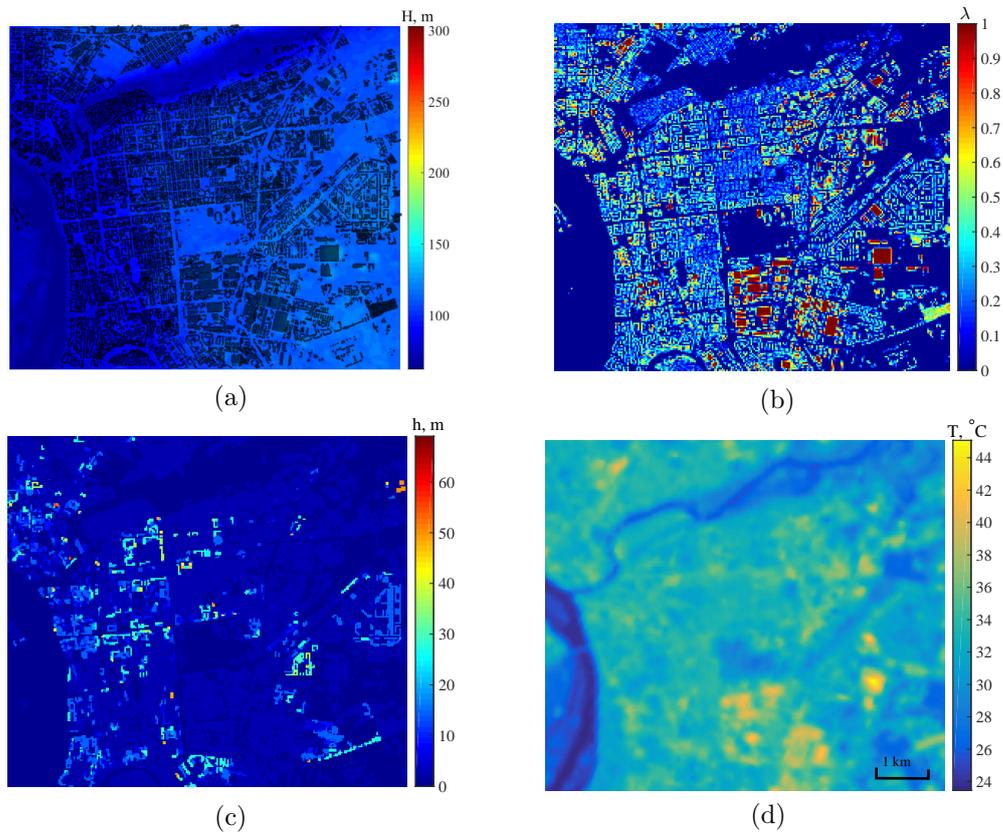


Fig. 1 Maps of morphological characteristics of the city of Omsk: elevation field H with a built-up map (a), building density λ (b), building heights h (c) and an example of the map of LST (14 July 2013) - (d)

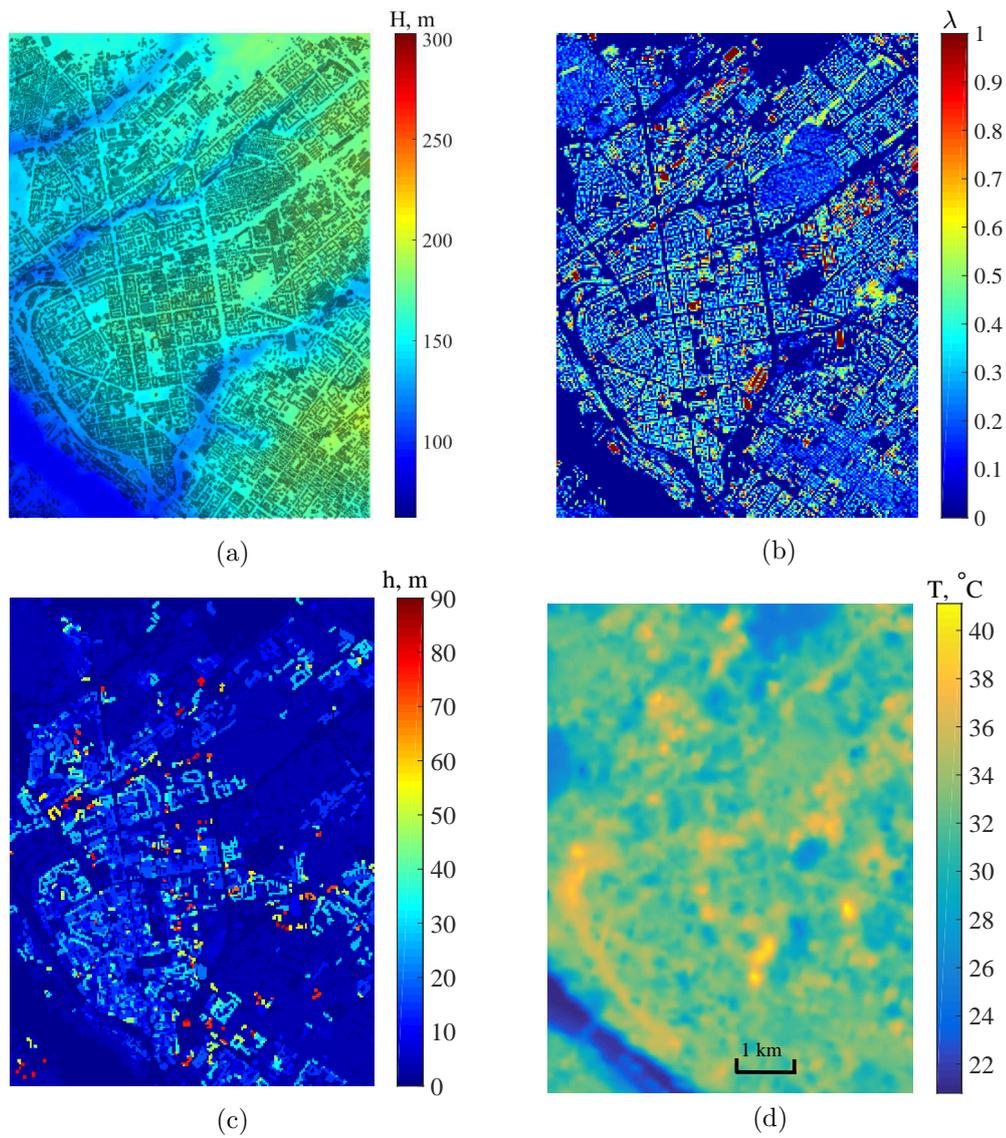


Fig. 2 Maps of morphological characteristics of the city of Novosibirsk: elevation field H with a built-up map (a), building density λ (b), building heights h (c) and an example of the map of LST (14 July 2013) - (d)

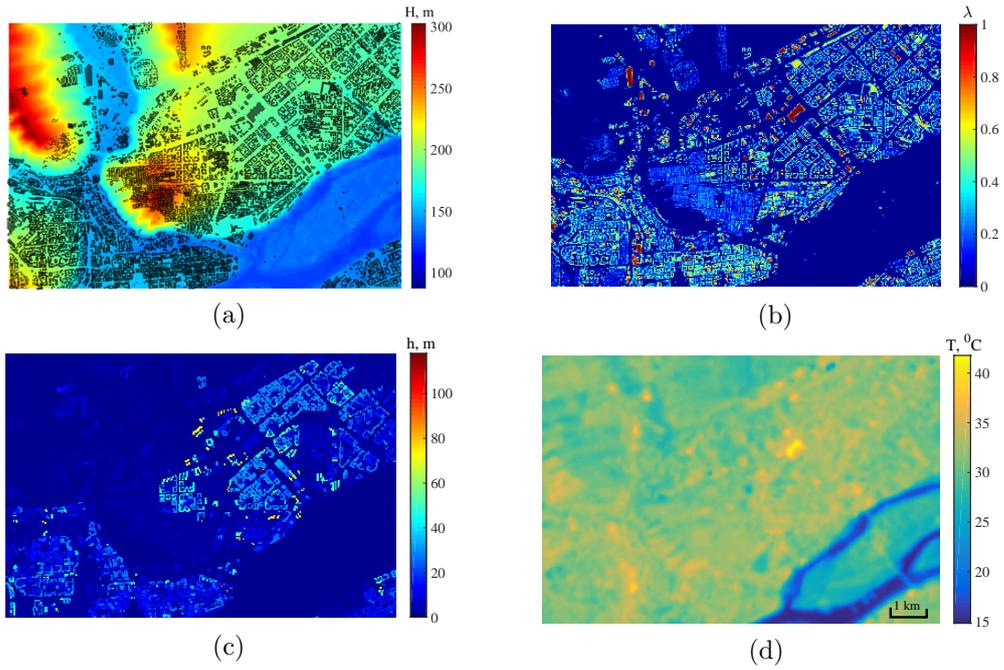


Fig. 3 Maps of morphological characteristics of the city of Krasnoyarsk region 1: elevation field H with a built-up map (a), building density λ (b), building heights h (c) and an example of the map of LST (14 July 2013) - (d)

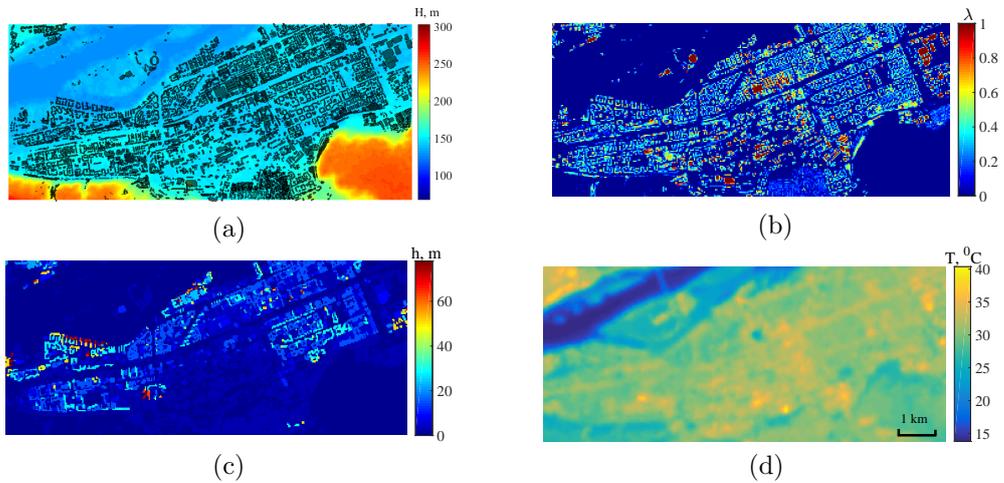


Fig. 4 Maps of morphological characteristics of the city of Krasnoyarsk region 1: elevation field H with a built-up map (a), building density λ (b), building heights h (c) and an example of the map of LST (14 July 2013) - (d)

2 Scaling effects on the relationships between the urban features and LST's

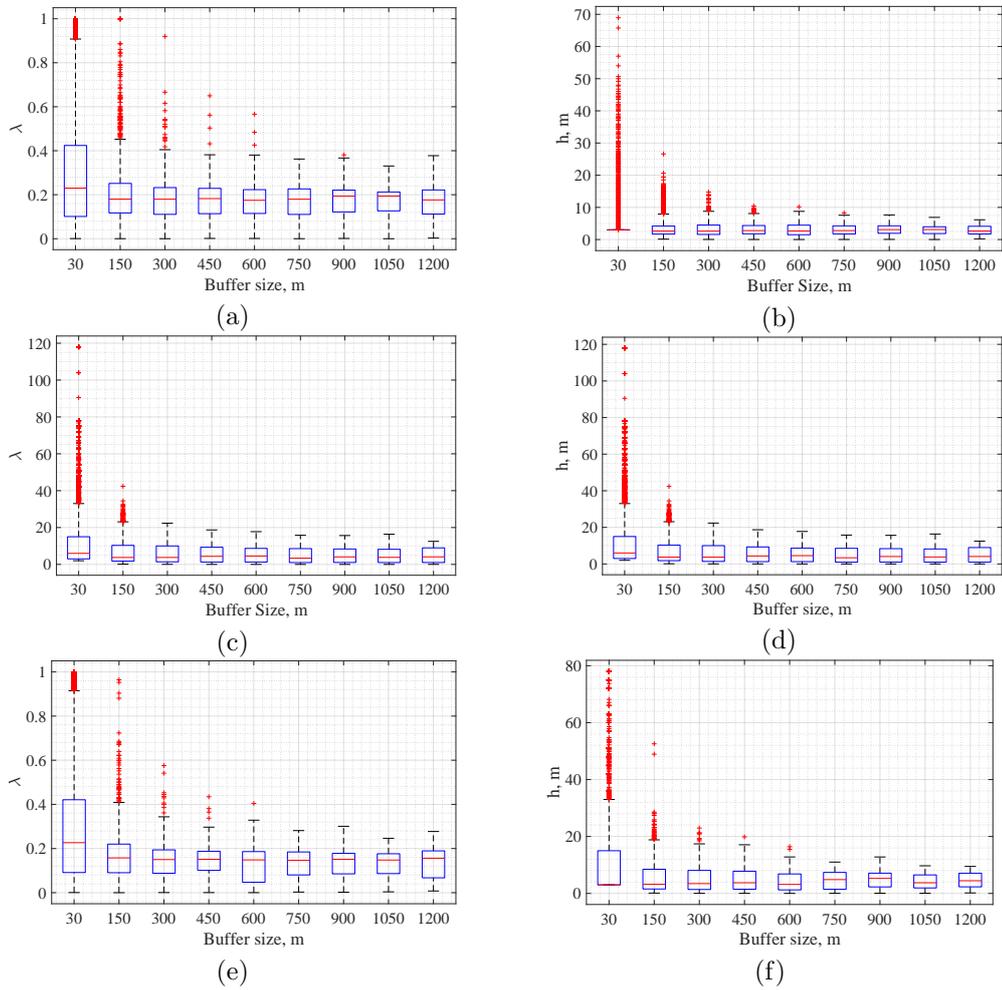


Fig. 5 Box plots showing the variance of building density (a, c, e) and building heights (b, d, f) among the spatial resolution for (a,b) - Omsk, (c,d) - Krasnoyarsk region 1, (d, f) - Krasnoyarsk region 2

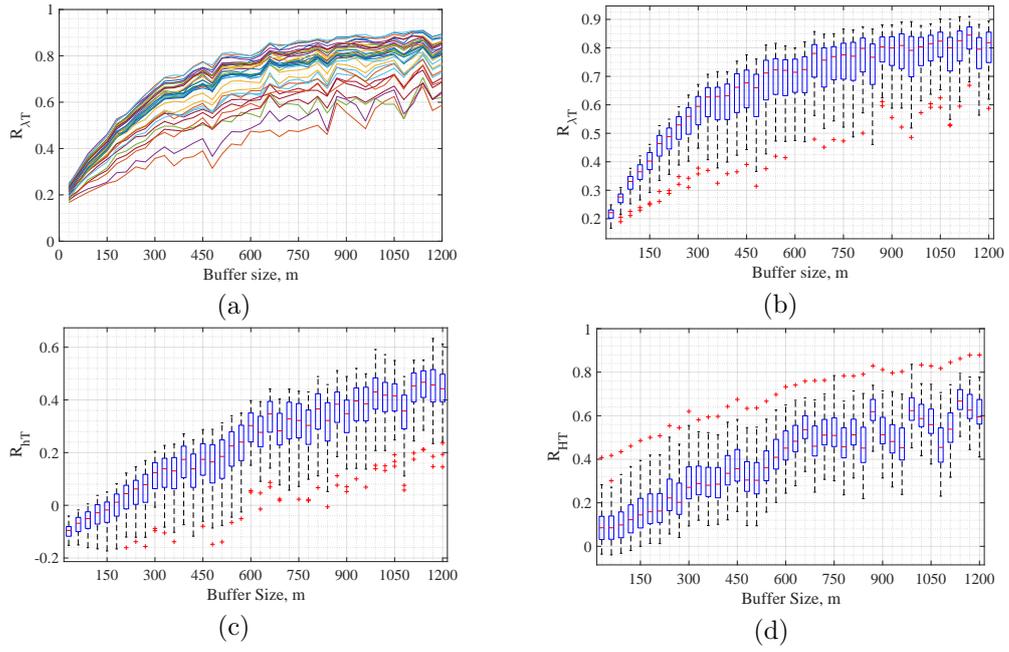


Fig. 6 The variation of $R_{\lambda T}$ as the buffer size increases for each day of Omsk database (a) and corresponded box plot (b); box plots showing the variance of R_{hT} and R_{HT} among a buffer size are presented in (c) and (d) respectively

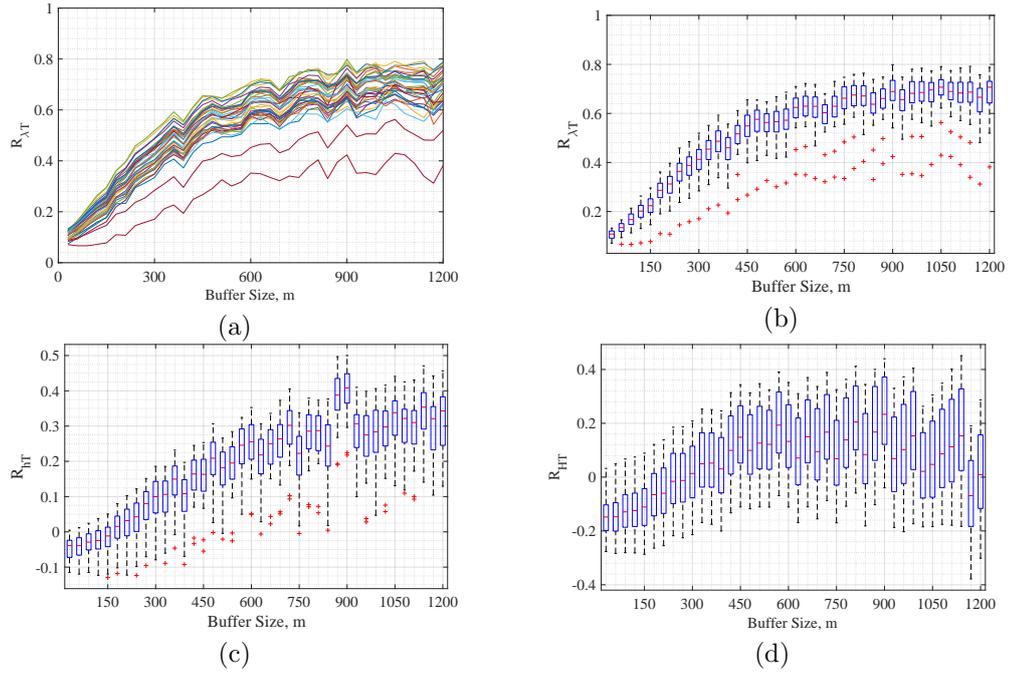


Fig. 7 The variation of $R_{\lambda T}$ as the buffer size increases for each day of Novosibirsk database (a) and corresponded box plot (b); box plots showing the variance of R_{hT} and R_{HT} among a buffer size are presented in (c) and (d) respectively

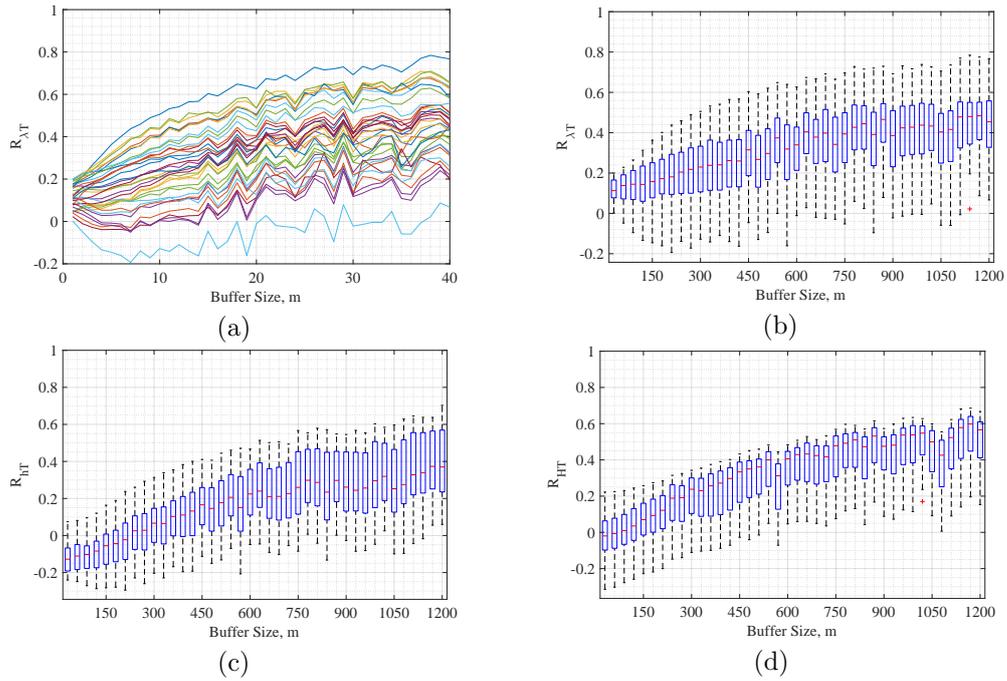


Fig. 8 The variation of $R_{\lambda T}$ as the buffer size increases for each day of Krasnoyarsk region 1 database (a) and corresponded box plot (b); box plots showing the variance of $R_h T$ and $R_H T$ among a buffer size are presented in (c) and (d) respectively

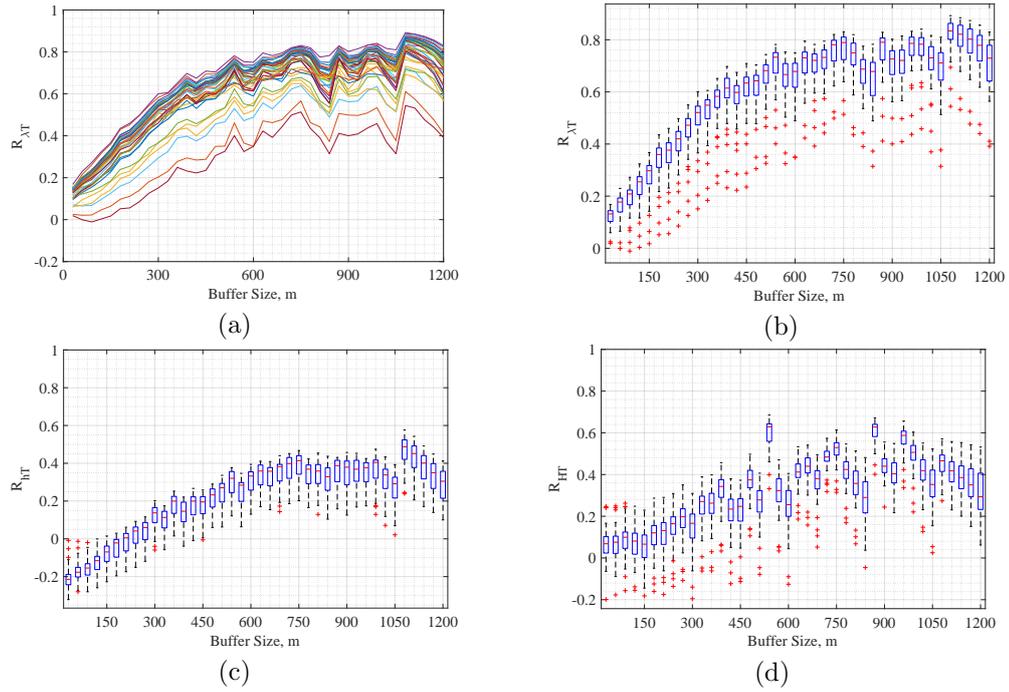


Fig. 9 The variation of $R_{\lambda T}$ as the buffer size increases for each day of Krasnoyarsk region 2 database (a) and corresponded box plot (b); box plots showing the variance of R_{hT} and R_{HT} among a buffer size are presented in (c) and (d) respectively