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# 夏季における石狩～苫小牧間の海陸風循環
# Land-Sea Circulation between Ishikari and Tomakomai in boreal summer

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This paper deals with the horizontal scale land and sea breeze circulation (LSBC) between Ishikari and Tomakomai and sea surface temperature (SST). The diurnal variation of LSBC during August of 1985-2008 is investigated using the data from the Automated Meteorological Data Acquisition System (AMeDAS) and Sapporo City Multisensor(MULTI) and analysis data of sea condition.

Area from Ishikari to Tomakomai has a unique topography. This area lies between Japan sea and Pacific ocean and it is not known whether it is affected by Japan sea's LSBC or that by Pacific ocean's LSBC. This area accounts for 30 percent of the total population of Hokkaido. Therefore, it is important to understand the characteristic of climate in this area. To discuss the LSBC effect, this area is divided into three regions: The first plain is from Ishikari city to Sapporo city (hereafter abbreviated as IS) and second plain from Ebetsu city to Chitose city (EC), and third is from Atsuma city to Tomakomia city (AT).

LSBC was observed between Ishikari and Sapporo. When Japan SST was higher than climatological temperature by 1 degree celsuis, LSBC appeared clear because sea breeze's sojourn time increased. On the other hand, when Japan SST was 1 degree celsius lower than climatological temperature, sea breeze'sojourn time decreased. Therefore, it can be considered that LSBC over this area and SST have interactions.

Area between Tomakomai and Atsuma could have LSBC, too. When Pacific SST increased by one degree or decreased by one degree compared with climatological temperature, Tomakomai and Atsuma's sea breeze's sojourn time increased.

Between Ebetsu and Chitose, regardless of Japan or Pacific SST, southerly wind could be observed all day long and wind speed is not changed. It was presumed that area between Ebetsu and Chitose didn't have LSCB. Therefore, it can be concluded that wind direction was not related to SST.

These results suggest that the climate characteristics over Hokkaido region may change if global warming continues.
Keywords: topography, thermal blance, horizontal scale