

## Population Distribution and Its Spatial Relationship with Terrain Elements in Lancang – Mekong River Basin

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**Abstracts:** Based on the STRM DEM ( 90 m × 90 m ) and 1km × 1km population density raster data , using GIS spatial analyst and mathematical statistics method , this paper analyzed the population distribution in Lancang – Mekong River Basin , quantified the relationship between population and topographical parameters , namely elevation , slope , aspect and relief degree of land surface ( RDLS ) . The results show that: 1. The population distribution pattern of Lancang – Mekong basin is dense in southern areas and sparse in the northern areas. The most intensive area of population distribution is in the southern of the Mekong Delta , while Zado County in the source has large areas with no population; 2. The population density of Lancang – Mekong basin has experienced a variation process of rising slowly after dropping sharply and then declining again until die out with the elevations moving from low to high. The total population showed an inverted exponential growth with altitudes; 3. 80% population in Lancang – Mekong basin concentrated in the flat areas with slope gradient less than 2. When slope gradient reaches 38° , the population cumulative curve tends to be stable; 4. The distribution of population is balanced in each slope aspect of Lancang – Mekong basin , which indicates that slope aspect has no dominate influence on population distribution; 5. The population density and RDLS has an inverted exponential relationship in Lancang – Mekong basin. RDLS has an relatively significant influence on population distribution , the majority of population in the basin is located in regions with low relief degree of land surface.

**Key words:** Lancang – Mekong River; population distribution; terrain; GIS; spatial analyse

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### 封面照片: 西秦岭

秦岭自西向东横亘于我国中部 ,可分为西、中、东三段。西段称西秦岭 ,其地质构造属秦岭褶皱的西延部分;地处我国地势的第一级阶梯向第二级阶梯的过渡带 ,西部向甘南高原过渡 ,北部向陇中黄土高原过渡 ,南部向四川盆地过渡 ,东部跨嘉陵江与秦岭中段和汉中盆地连接。西秦岭的海拔一般在 2 000 ~ 4 000 m ,主要山脉有太皇山( 海拔 3 113 m )、陇南山地( 最高峰雄黄山 ,海拔 4 187 m )、鸟鼠山( 海拔 2 609 m )、迭山( 海拔 4 920 m )等;山脉走向以东西向为主 ,陇南山地的走向大致呈西北到东南。西秦岭山岭波状起伏 ,有许多深切山谷的河流发育 ,形成高山峻岭与峡谷、盆地相间的复杂地形。

照片为甘肃文县境内丛山叠岭的陇南山地。

( 嘉 益 )