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基于EOS/MODIS的青海草原春季干旱监测模型

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摘要：

采用对地观测系统/中分辨率成像光谱仪（EOS/MODIS）白天、夜间两时相的资料，应用热惯量监测土壤湿度的基本原理，通过拟合计算，建立了土壤湿度和热惯量之间的线性和对数模型，并选择线性模型为干旱监测的基础模型。对辐射方法反演温度和直接反演温度2种方法进行了分析比较，认为直接反演温度法计算简便、易于实际应用。针对热惯量模型只能监测裸地土壤湿度的缺点，给出了归一化植被指数（NDVI）订正方法，初步拟合计算,青海地区Kn值为3。对草原干旱的定义，沿用青海省地方灾害标准。通过以上分析，建立了青海省草原春季干旱遥感监测模型。经实际监测应用，认为在青海范围内可替代人工取土监测土壤湿度。

关键词： MODIS； 热惯量；土壤湿度；遥感

EOS/MODIS based drought monitoring models for pasture in spring in Qinghai Province

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Abstract:

By monitoring soil moisture with ATI and EOS/MODIS satellite data in day and night the linear and logarithmic models of thermal inertia with soil moisture of Qinghai Province were established, and the former was selected as basal model. Two methods, indirectly inversing temperature by radiation and directly inversing temperature, were analyzed and compared. The directly inversing temperature method was brief and practical. Due to the shortage of ATI model, which could only monitor soil moisture of bare land, the revised method through NDVI was utilized. And then, the remote sensing monitoring model for pasture in spring in Qinghai Province was built up. By practical application, it could be concluded that this new method could replace the traditional monitoring method.

Keywords: MODIS thermal inertia soil moisture remote sensing

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