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## 1995년도 學術大會 發表 論文抄錄

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### < 論文抄錄 >

#### 春季 學術大會

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### An Observational Study of the Galactic Worm GW 46.4+5.5

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We present the results of a multiwavelength study on the galactic worm GW 46.4+5.5. Infrared(IR) and radio continuum, GW 46.4+5.5 appears as a long(7' or 280  $\mu$ c), filamentary structure stretching out vertically from the galactic plane. The morphology is similar to the North Polar Spur(NPS) in the sense that the radio continuum structure is systematically shifted(by  $0.^{\circ} 5 - 1.^{\circ} 5$ ) from the IR structure.

By analyzing the IRAS and the Bonn survey data, we have found that modt of the radio continuum is non-thermal. We consider that the galactic worm GW 46.4+5.5 is that wall of a supershell similar to the NPS, but at a gteater distance.

We have carried out scanning-observations across the galactic worm in HI 21cm and  $^{12}\text{CO}$  J=1-0 lines. By analyzing the HI and IRAS data, we have found a good correlation ( $r=0.96$ ) between HI column density( $N(\text{HI})$ ) and the 100 micro - meter optical depth ( $\tau_{100}$ ),  $\tau_{100}/10^{-6} = (13.8 \pm 1.5) \times [N(\text{HI})/10^{20} \text{cm}^{-2}] + 186 \pm 6$ . CO emission has been detected where  $\tau_{100}$  deviates significantly from the above relation. We doscuss the implications of our results on the formation of CO molecules.