

1 Strengthening the formulation of H-SPP-S

1.1 Preprocessing

Estudiar resultados que eliminen algunas de las posibles aristas de E_S y E_T Hablar que las aristas E_B se pueden preprocesar porque los puntos están fijados

1.2 Valid inequalities

This subsection is devoted to show some results that adjust the big-M constants that appear in the previous formulation, specifically, in the (??), where the modelling of the sign requires to compute the lower and upper bounds L and U , respectively. We are going to expose that these bounds can be computed exactly for the cases when the neighborhoods are ellipses and segments.

1.2.1 L and U bounds for the case of ellipses

Let $\overline{P_B^1, P_{B'}^2} \in$