

# Table Of Content

1.1	Distributed Model . . . . .	5
1.2	Geometric Intersection Graph Classes . . . . .	6
1.3	Toolbox . . . . .	10
1.3.1	Spanning Tree and Related Problems . . . . .	10
1.3.2	Problems Equality and Permutation . . . . .	12
<b>2</b>	<b>Proof Labeling Schemes</b>	<b>15</b>
2.1	Permutation Graphs . . . . .	15
2.2	Trapezoid Graphs . . . . .	20
<b>3</b>	<b>Distributed Interactive Protocols</b>	<b>25</b>
3.1	Corresponding Order Problem . . . . .	25
3.2	Linear Assignment Problem . . . . .	28
<b>4</b>	<b>Three-round Distributed Interactive Protocols</b>	<b>30</b>
4.1	Circle Graphs . . . . .	30
4.2	Polygon Circle Graphs . . . . .	33
4.3	Unit-Square Graphs . . . . .	37
<b>5</b>	<b>Lower Bounds</b>	<b>49</b>
5.1	Permutation and Trapezoid Graphs . . . . .	49
5.2	Circle And $k$ -polygon-circle Graphs . . . . .	51
5.3	Unit Square Graph . . . . .	53

