

C O N T E N T S

PREFACE

Proposal-Philosophical background-Specific criteria.

INTRODUCTION

Summary-Comparison with special and general relativity.

I CHAPTER - ABSOLUTE KINEMATICS

1 - THE EVENT SPACE

Event space, simultaneity, spatial metric, future orientation, time-Poincare's and Galilei's maps-Space and time measure unity-Special charts-Physical description.

2 - FURTHER SPACES AND MAPS

Vertical and unitary spaces-Second order spaces, affine connection and canonical projection.

3 - ABSOLUTE KINEMATIC

Absolute world-line and motion-Absolute velocity and acceleration-Geometrical analysis-Physical description.

II CHAPTER - FRAMES OF REFERENCE

1 - FRAMES AND THE REPRESENTATION OF \mathbb{E} .

Frames, positions and adapted charts-Representation of the position space \mathbb{P} -Frame motion-Representation of \mathbb{E} -Physical description.

2 - FRAMES AND THE REPRESENTATION OF $T\mathbb{E}$.

Frame velocity and jacobians-Representation of $T\mathbb{P}$ -Frame vertical and horizontal spaces-Frame metric function-Representation of $T\mathbb{E}$ - Physical description.

3 - FRAMES AND THE REPRESENTATION OF $T^2\mathbb{E}$.

Frame acceleration, second jacobians, strain and spin-Representation of $T^2\mathbb{P}$ and $\nu T^2\mathbb{P}$ -Frame connection and Coriolis and dragging maps-Physical description.

4 - SPECIAL FRAMES

Affine frame-Rigid frames-Translating frames-Inertial frames-Physical description.

III CHAPTER - OBSERVED KINEMATICS

1 - OBSERVED KINEMATICS

Observed motion and absolute velocity addition and Coriolis theorem-Physical description.

2 - RELATIVE KINEMATICS

Motion of a frame observed by a frame-velocity addition and generalized Coriolis theorem-Physical description.