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ed ligh jec i

Introduction

I la i bea i g a e e e ial c e i de e gi ee i g

he def a i f he a e , he di lace e f he bea i g ca be de e i ed. SLP i ca able f high- eed ea e e a d e ela i el i le e e i e e [5].

Advantages of vision-based displacement measurement

Non-contact measurement: Vi i -ba ed e h d d e i e h ical c ac i h he i la i bea i g, eli i a i g he i k f i e fe e ce i h he e ' d a ic .

High accuracy: Wi h ad a ce e i ca e a ech l g a d i age ce i g alg i h , i i -ba ed e h d ca achie e high le el f ea e e acc ac [6].

Real-time monitoring: Ce ai i i -ba ed ech i e , ch a LSV, e he ad a age f eal- i e i i g, idi g i edia e feedback he di lace e beha i f he i la i bea i g.

Full-field measurement: Vi i -ba ed ech i e ide a a iall di ib ed di lace e eld, e abli g e gi ee b e e l cali ed di lace e a d de ec e ial i e i he bea i g' beha i [7].

Challenges and limitations

Lighting conditions: Vi i -ba ed ech i e a e e i i e e gi ee i g e . A ech l g c i e ad a ce, i i - ba ed di lace e ea e e i e ec ed la a i al le i e i g he afe a d eliabili f a i if a c e e .

Rega dle f he la ge all def a i f he i la i bea i g, he he ca e a i ed i g, he h i al di lace e i e hi b ai ed b he i al e h d i al he a e a he e l b ai ed b he di lace e e e. e ea e e e i la ge he he ca e a i i g. H e e, c a ed i h he e l ea ed b he di lace e e e, he ab l e e f he eak h i al di lace e i le ha 1 , a d he e a i le ha 1.5%, hich ee he acc ac e i e e f he h i al di lace e ea e e f he i a i bea i g. i e l h ha he ed i al e h d ca c le e he h i al def a i de ec i f he i la i bea i g de a i c di i .

e a ef e d f he e ical di lace e i e hi c e ea ed b he i al e h d i ba icall he a e a he i e hi c e f he di lace e e e, b i c a e c i l al g i h he i e i . +e ea i ha he e ical di lace e f he i la i bea i g i le ha 1 . C a ed i h he ab l e al e f he e ical di lace e , he e a ic e ca ed b he i al ea e e e h d i clea , b he a i ab l e e i l 1.851 . Li ied b he e ei e al e i e , he di lace e f he ca e a i he e ei e i ±8 I he ac al ei ic e , he ca e a i ed he g d e c e, he ela i e di lace e be ee he ca e a a d he i la i bea i g i he h i al di lace e f he i la i bea i g, a d he a ge f di lace e ca be e i a ed i ad a ce. e ef e, if he eld f ie f he ca e a i e be ide ha he h i al di lace e f he i la i bea i g, he acc a e ea e e e l ca be b ai ed. i e h d i ill a licable ac al ei ic i la i jec .

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