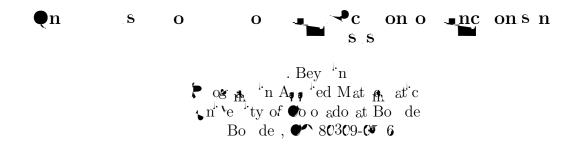
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## I Introduction

The latest are noticed any tensor coordinate in the line of the area of the ar

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$$c_{\mathbf{k};\mathbf{k}';\mathbf{l}}^{\mathbf{j};\mathbf{j}';\mathbf{m}} = \int_{-\infty}^{+\infty} \mathbf{k}_{\mathbf{k}'}^{\mathbf{f}} \left( \mathbf{k}_{\mathbf{k}'}^{\mathbf{f}} \right) \mathbf{k}_{\mathbf{k}'}^{\mathbf{f}} \left( \mathbf{k}_{\mathbf{k}'}^{\mathbf{f}} \right) d t M$$

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In a  $n_{\rm th}$  e of a, cat on t e f nct on of inte e t a e t e f nct on t at a e ingradion of a contraction. The  $n_{\rm th}$  e of sm figure are et coefficient of c f nct on the contraction of the coefficient of c f nct on the c f nct on the c f

## II Multiresolution algorithm for evaluating u

ncoin n c on n sc s

Let  $\operatorname{con}$  de te, of  $\operatorname{et}$  on of  $\operatorname{\mathsf{L}}^2(\mathbf{R})$  on , ace  $\mathbf{V_j}$ ,

$$\mathbf{y}$$
  $\mathbf{y}$   $\mathbf{y}$   $\mathbf{y}$   $\mathbf{v}$   $\mathbf{y}$   $\mathbf{v}$ 

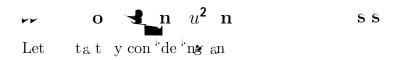
$${}^{2}_{0} - \ {}^{2}_{\mathbf{n}} - \sum_{\mathbf{j}=1}^{\mathbf{j}=\mathbf{n}} \left\{ (\mathbf{j}_{-1})^{2} - (\mathbf{j}_{-1})^{2} \right\} - \sum_{\mathbf{j}=1}^{\mathbf{j}=\mathbf{n}} (\mathbf{j}_{-1} + \mathbf{j}_{-1}) - (\mathbf{j}_{-1})$$

 $\int_{0}^{1} ds \, j = 1$  j + j,  $\int_{0}^{1} e \, o \, t \, ds \, n$ 

$${}_{0}^{2}-{}_{\mathbf{n}}^{2}-\sum_{\mathbf{j}=1}^{\mathbf{j}=\mathbf{n}}(\mathbf{j}+\mathbf{j})M$$

О

$$\frac{2}{0}$$
  $\sum_{\mathbf{j}=1}^{\mathbf{j}=\mathbf{n}} \mathbf{j} \mathbf{j} +$ 



cae — I, ech , te t e d e ence and a e see  $d_{\mathbf{k}}^{\mathbf{j}+1}$  and  $\mathbf{k}^{\mathbf{j}+1}$ . e t en add  $\mathbf{k}^{\mathbf{j}+1}$  to  $\mathbf{k}^{\mathbf{j}+1}$  efo e e and not t f t e according to t e fo o ing , y  $\mathbf{k}$  d c  $\mathbf{k}$  e

The form a fore a string the dree ence and are age  $d_{\mathbf{k}}^{\mathbf{j}+1}$  and  $d_{\mathbf{k}^{\mathbf{j}+1}}$  and  $d_{\mathbf{k}^{\mathbf{j}+1}}$  and  $d_{\mathbf{k}^{\mathbf{j}+1}}$  and  $d_{\mathbf{k}^{\mathbf{j}+1}}$  and d

$$\sum_{\mathbf{j}=1}^{2} \sum_{\mathbf{k} \in \mathbf{Z}} \hat{d}_{\mathbf{k}}^{\mathbf{j}} + d_{\mathbf{k}}^{\mathbf{j}} ) + \sum_{\mathbf{k} \in \mathbf{Z}} (\mathbf{k}^{\mathbf{n}} + \mathbf{k}^{\mathbf{n}} + \mathbf{k}^{\mathbf{n}} + \mathbf{k}^{\mathbf{n}}) )$$

It cea, tatten<sub>m</sub> e of ope at on for cent ting te as evan on of  $\frac{2}{0}$  of tona to ten<sub>m</sub> e of grif cant coefficient  $d_{\mathbf{k}}$  in terms are evan on of 0. In terms to transfer the original function even enter  $\mathbf{k}$  is even an on of  $\mathbf{k}$ . t e  $n_{11}$  e of og e at on t og o t on a to N. If t e o t in a t nct on t eg e ented y os N sn f cant as coeff c ent, t en t e n e of o e at on to can t te t a e o o tona to og N. Te ago tin in te aa a ea y gene a ze to t en t'dh en ona ca e.

o 
$$\mathbf{l} \mathbf{n} u^2 \mathbf{n}$$
 s.s.

e no et n to t e gene a ca e of 'a'e et and de 'e an ago th to e and .4)
into t e 'a'e et a e . n' e n t e ca e of t e aa a', t e, od ct on a g'en ca e " o'e " into t e fine ca e and 'e de'e o, an efficient a, oac to and e The value of the second considers the case of the second considers that the second considers the case of the second considers that the second considers the case of the second considers that the second considers the second considers that the second considers that the second considers the second considers that the second considers the second considers that the second considers that the second considers the second considers the second considers that the second considers the second considers the second considers that the second considers the second con

$$M_{\mathbf{WWW}}^{\mathbf{j};\mathbf{j}'} \stackrel{}{\longrightarrow} M' \stackrel{}{\longrightarrow} - \int_{-\infty}^{+\infty} \stackrel{\mathbf{j}}{\longleftarrow} ) \stackrel{\mathbf{j}}{\longleftarrow} ) \stackrel{\mathbf{j}}{\longleftarrow} ) \stackrel{\mathbf{d}}{\longleftarrow} M \qquad \qquad \qquad \qquad . 15)$$

e e '  $\leq$  . It cea, t at t e coeff c ent  $M_{\mathbf{WWW}}^{\mathbf{j};\mathbf{j}'}$  M'M a e dent cay ze o fo |-'| o, e e o detend on t e o e at of t e o t of t e a f nct on . Then  $M_{\mathbf{WWW}}^{\mathbf{j};\mathbf{j}'}$  e of nece a y coeff c ent in ay e ed ced f the yole wing that

$$M_{\mathbf{WW}}^{\mathbf{j};\mathbf{j'}} \stackrel{}{\underset{\longleftarrow}{M}} M \stackrel{-\mathbf{j'}=2}{\underset{\longleftarrow}{M}} \stackrel{\mathbf{j}-\mathbf{j'}}{\underset{\longleftarrow}{\longrightarrow}} ) \stackrel{\mathbf{j}-\mathbf{j'}}{\underset{\mathbf{k}-\mathbf{k'}}{\longleftarrow}} ) \stackrel{0}{\underset{\longrightarrow}{\otimes}} M \stackrel{\mathbf{j}}{\underset{\longrightarrow}{\longrightarrow}} M \stackrel{\mathbf{j'}}{\underset{\longrightarrow}{\longrightarrow}} M \stackrel{\mathbf{j}}{\underset{\longrightarrow}{\longrightarrow}} M \stackrel{\mathbf{j'}}{\underset{\longrightarrow}{\longrightarrow}} M \stackrel{\mathbf{j'}}{\underset{\longrightarrow$$

ot at

$$M_{\mathbf{W}\mathbf{W}\mathbf{W}}^{\mathbf{j};\mathbf{j}'}$$
  $M'M$   $-\mathbf{j}'=2\tilde{M}_{\mathbf{W}\mathbf{W}\mathbf{W}}^{\mathbf{j}-\mathbf{j}'}$   $-\mathbf{j}'M^{\mathbf{j}-\mathbf{j}'}$   $-\mathbf{j}$ 

e a o o e 'e t at t e coeff c'ent 'n ) decay a t e d' tance — — 'et 'een t e cae 'nc ea e . Pe 't'ng . ) a

$$\tilde{M}_{\text{WWW}}^{\text{r}} - {}'M^{\text{r}} - {}_{\ell}) - {}^{-\text{r}} \int_{-\infty}^{+\infty} \sqrt{-} {}^{\text{r}} \cdot {$$

and eca instatte es a tyofte, od ct - ; ) - ; - + ') inceae inea y t tenn e of an instatt e es a tyofte, od ct - ; inch en tofte for incident en tofte e incident en t

$$|\tilde{M}_{\mathbf{W}\mathbf{W}\mathbf{W}_{\mathbf{V}}}^{\mathbf{r}} - {}'M^{\mathbf{r}} - {}_{\mathbf{I}})| \le C^{-\mathbf{r} \cdot \mathbf{M}} \qquad \qquad \mathbf{J} \cdot \mathbf{J}$$

У

$$M^{\mathbf{j}}_{\mathbf{V}\,\mathbf{W}}: \mathbf{V}_{\mathbf{j}} \times \mathbf{W}_{\mathbf{j}} \to \mathbf{V}_{\mathbf{j}} \bigoplus_{\mathbf{j}_{0} \leq \mathbf{j}' \leq \mathbf{j}} \mathbf{W}_{\mathbf{j}'} M$$
 (C)

and

$$M_{\mathbf{WW}}^{\mathbf{j}}: \mathbf{W_{j}} \times \mathbf{W_{j}} \to \mathbf{V_{j}} \bigoplus_{\mathbf{j}_{0} \leq \mathbf{j}' \leq \mathbf{j}} \mathbf{W_{j'}}$$

ince

$$\mathbf{V_{j}} \bigoplus_{\mathbf{j}_{0} \leq \mathbf{j}' \leq \mathbf{j}} \mathbf{W_{j''}} - \mathbf{V_{j_{0}-1}} M$$

and

$$\mathbf{V_{j}} \subset \mathbf{V_{j_0-1}} M \ \mathbf{W_{j}} \subset \mathbf{V_{j_0-1}} M$$

$$\mathbf{V}_{\mathbf{j}_0-1} \times \mathbf{V}_{\mathbf{j}_0-1} \to \mathbf{V}_{\mathbf{j}_0-1} M$$

e need 'gn' f cant y fe 'e coeff c'ent t an fo t en a 'ng . 0) and . 1). Indeed, 't' f' c'ent to con 'de on y t e coeff c'ent

$$M \longrightarrow M' \longrightarrow -\mathbf{j} = 2 \int_{-\infty}^{+\infty} (\mathbf{j} - \mathbf{j}) (\mathbf{j} - \mathbf{j}) d\mathbf{j} d\mathbf{j}$$

and teay to eet at  $M M' M - j=2M_0 - M' - j$ , ee

To go the a more than attention derive and one and the arrow of the a

In tead of . 4), the free ent to conde ten approx

$$\mathbf{V}_0 \times \mathbf{V}_0 \to \mathbf{V}_0$$

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$$\underbrace{*} \longrightarrow \sum_{\mathbf{k}} \mathbf{k} \underbrace{*} - M$$

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## References

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