Team Number:	2020XXXXXXXXX
Problem Chosen:	A

2020 APMCM summary sheet

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Keywords: Keywords1 Keywords2 Keywords3

Contents

I. Introduction

In order to indicate the origin of problems, the following background is worth mentioning.[7]

$$\int_1^2 x\mathrm{d}x$$

1.1

$$\sum_{i=0}^{\infty} x^n \tag{1}$$

1.2

1.3

II. The Description of the Problem

2.1 How do we approximate the whole course of ?

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-

2.2 How do we define the optimal configuration?

1) From the perspective of :

2) From the perspective of the :

3) Compromise:

2.3 The local optimization and the overall optimization

-
-
- Virtually:

2.4 The differences in weights and sizes of

2.5 What if there is no data available?

III. Models

3.1 Basic Model

3.1.1 *Terms, Definitions and Symbols*

The signs and definitions are mostly generated from queuing theory.

3.1.2 *Assumptions*

3.1.3 *The Foundation of Model*

1) The utility function

- The cost of :
- The loss of :
- The weight of each aspect:
- Compromise:

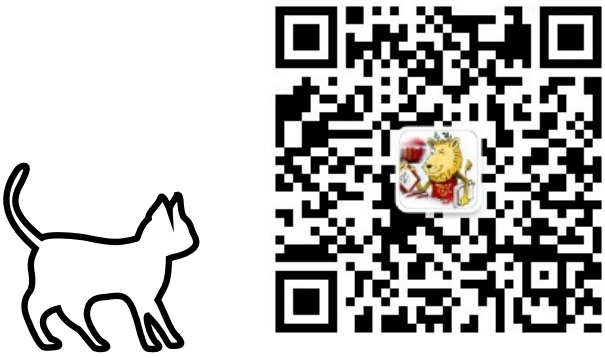

Figure 1 关注我们公众号，学习更多知识

3) The overall optimization and the local optimization

- The overall optimization:
- The local optimization:
- The optimal number of :

3.1.4 *Solution and Result*

1) The solution of the integer programming: 2) Results:

3.1.5 *Analysis of the Result*

- Local optimization and overall optimization:
- Sensitivity: The result is quite sensitive to the change of the three parameters
-
- Trend:
- Comparison:

3.1.6 *Strength and Weakness*

Strength: The Improved Model aims to make up for the neglect of . The result seems to declare that this model is more reasonable than the Basic Model and much more effective than the existing design.

Weakness: Thus the model is still an approximate on a large scale. This has doomed to limit the applications of it.

IV. Conclusions

4.1 Conclusions of the problem

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4.2 Methods used in our models

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4.3 Applications of our models

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V. Future Work

5.1 Another model

5.1.1 *The limitations of queuing theory*

5.1.2

5.1.3

5.1.4

VI. References

[1] Author, Title, Place of Publication: Press, Year of publication.

[2] author, paper name, magazine name, volume number: starting and ending page number, year of publication.

[3] author, resource title, web site, visit time (year, month, day).

[4] LaTeX资源和技巧学习 `https://www.latexstudio.net`

[5] LaTeX问题交流网站 `https://wenda.latexstudio.net`

[6] 模板库维护 `https://github.com/latexstudio/APMCMThesis`

[7] Kaposi, M. “IDIOPATHISCHES MULTIPLES PIGMENTSARKOM DER HAUT.” Wiener Klinische Wochenschrift, vol. 4, no. 2, 1872, pp. 265273.

VII. Appendix

Listing 1: The matlab Source code of Algorithm

```
kk=2;[mdd,ndd]=size(dd);
while ~isempty(V)
[tmpd,j]=min(W(i,V));tmpj=V(j);
for k=2:ndd
[tmp1,jj]=min(dd(1,k)+W(dd(2,k),V));
tmp2=V(jj);tt(k-1,:)=[tmp1,tmp2,jj];
end
tmp=[tmpd,tmpj,j;tt];[tmp3,tmp4]=min(tmp(:,1));
if tmp3==tmpd, ss(1:2,kk)=[i;tmp(tmp4,2)];
else,tmp5=find(ss(:,tmp4)~=0);tmp6=length(tmp5);
if dd(2,tmp4)==ss(tmp6,tmp4)
ss(1:tmp6+1,kk)=[ss(tmp5,tmp4);tmp(tmp4,2)];
else, ss(1:3,kk)=[i;dd(2,tmp4);tmp(tmp4,2)];
end;end
dd=[dd,[tmp3;tmp(tmp4,2)]];V(tmp(tmp4,3))=[];
[mdd,ndd]=size(dd);kk=kk+1;
end; S=ss; D=dd(1,:);
```

Listing 2: The lingo source code

```
kk=2;
[mdd,ndd]=size(dd);
while ~isempty(V)
    [tmpd,j]=min(W(i,V));tmpj=V(j);
for k=2:ndd
    [tmp1,jj]=min(dd(1,k)+W(dd(2,k),V));
    tmp2=V(jj);tt(k-1,:)=[tmp1,tmp2,jj];
end
    tmp=[tmpd,tmpj,j;tt];[tmp3,tmp4]=min(tmp(:,1));
if tmp3==tmpd, ss(1:2,kk)=[i;tmp(tmp4,2)];
else,tmp5=find(ss(:,tmp4)~=0);tmp6=length(tmp5);
if dd(2,tmp4)==ss(tmp6,tmp4)
    ss(1:tmp6+1,kk)=[ss(tmp5,tmp4);tmp(tmp4,2)];
else, ss(1:3,kk)=[i;dd(2,tmp4);tmp(tmp4,2)];
```

```
end;
end
    dd=[dd,[tmp3;tmp(tmp4,2)]];V(tmp(tmp4,3))=[];
    [mdd,ndd]=size(dd);
    kk=kk+1;
end;
S=ss;
D=dd(1,:);
```