

REFERANSESIDE

Rapportens tittel: SKÅNEVIKFJORDEN WAVE CONDITIONS	Dato: 13.02.85 Rapporten er: Fortrolig
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<small>4 emneord & maksimum 23 karakterer</small> Extrem wind 1-6 hour mean	Wave model Hordaland
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Referat: Maximum wave heights are calculated to 0.7 m after 6 hours and 0.8 m after 9 hours.

SKÅNEVIKFJORDEN. WAVE CONDITIONS

1. INTRODUCTION

The present report is a supplement to [1] where the extreme wind conditions in Skånevikfjorden are evaluated for the months of January and February.

The "FJORD-SEA" model [2] is used for calculating corresponding extremes for the significant wave heights ($H_{1/3}$). The area covered by the model is shown in figure 1. The grid length is 500 m.

2. WIND.

As pointed out in [1] the extreme cases will probably occur with winds from the sectors SE-S and SW-W in the months in question. And the extremes are expected to be of the same magnitude, 25 m/s, for both sectors. For the wave analysis two wind directions, 180° (S) and 225° (SW), are chosen.

Because of the fetch, it is the SW winds that will produce the highest waves. However, the extreme situations from this direction are of relatively short duration, most probably less than 6 hours. The 1 hour mean wind corresponding to the given 1 min. wind, will be about 20 m/s, and this is reduced to 18 m/s (35 knots), representing 3 - 6 hours means.

From the SE-S sector strong winds might be more steady, and the upper time limit is set to 9 hours, also with 18 knots.

3. WAVE HEIGHTS:

Copies of the model outprints are given in figures 2-4 for 180° after 3,6 and 9 hours, and figures 5 and 6 for 225° after 3 and 6 hours.

The maximum calculated significant wave heights extracted from figures 2-6 are summarized in table 1. It is seen from the table that the maximum wave heights from both directions are about the same, 0.8 and 0.7m.

Table 1. Highest calculated significant wave height (m) in the central part of Skånevikfjorden.

Storm duration Hours	Wind direction	
	180°	225°
3	0,5	0,5
6	0,7	0,7
9	0,8	-

REFERENCES

- [1] Fikke, S.M. et.al.: Skånevikfjorden. Extreme Wind Conditions. EFI TR 3169/DNMI FR 2/85 KLIMA. Oslo 1985.
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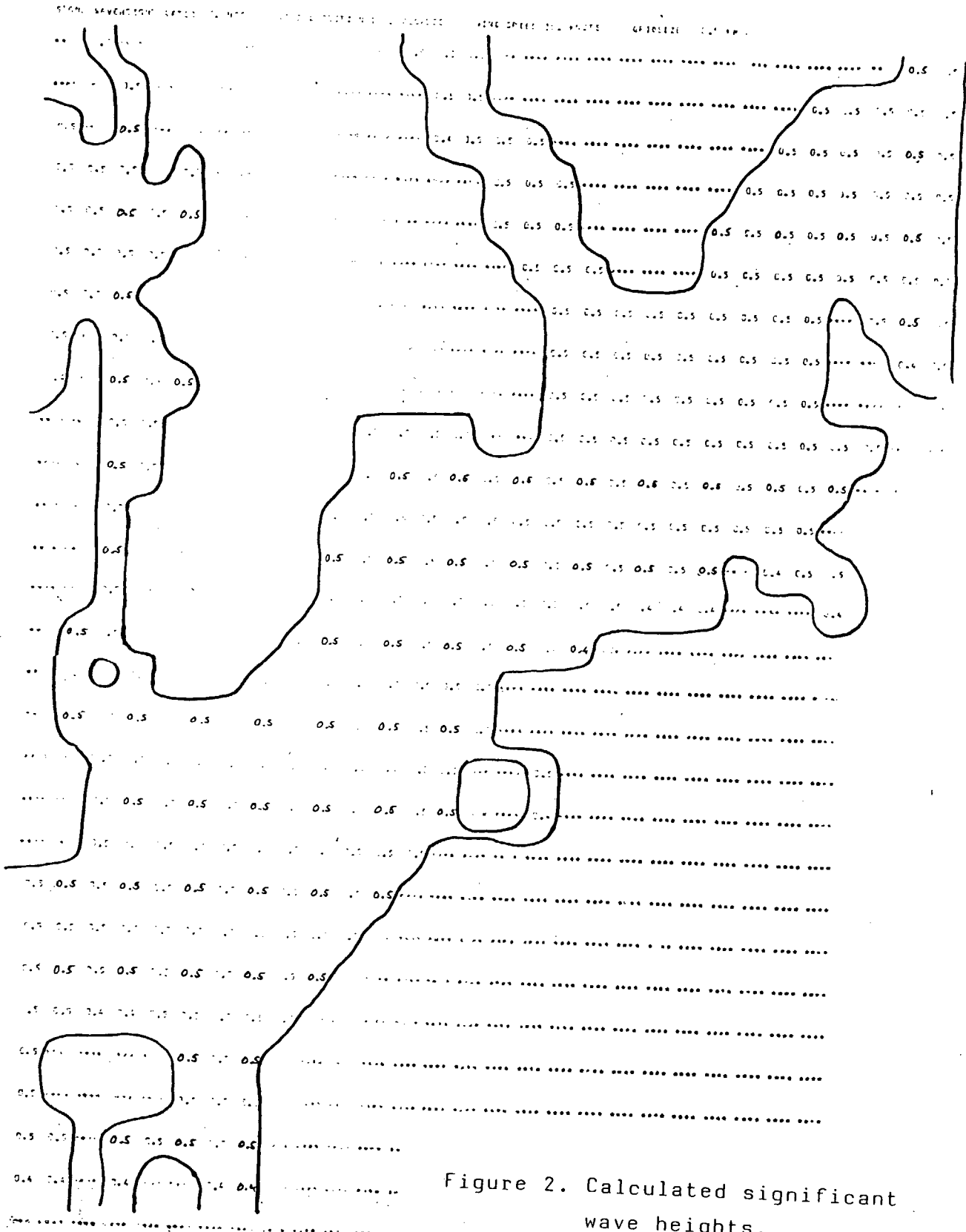


Figure 2. Calculated significant
 wave heights.
 Direction: 180°
 Wind speed: 35 knots
 Direction: 3 hours

SIGN. WAVEHEIGHT AFTER 9 HRS WIND DIRECTION DEG. DEGREES WIND SPEED 35 KNOTS GRIDSIZE 0.5 KM

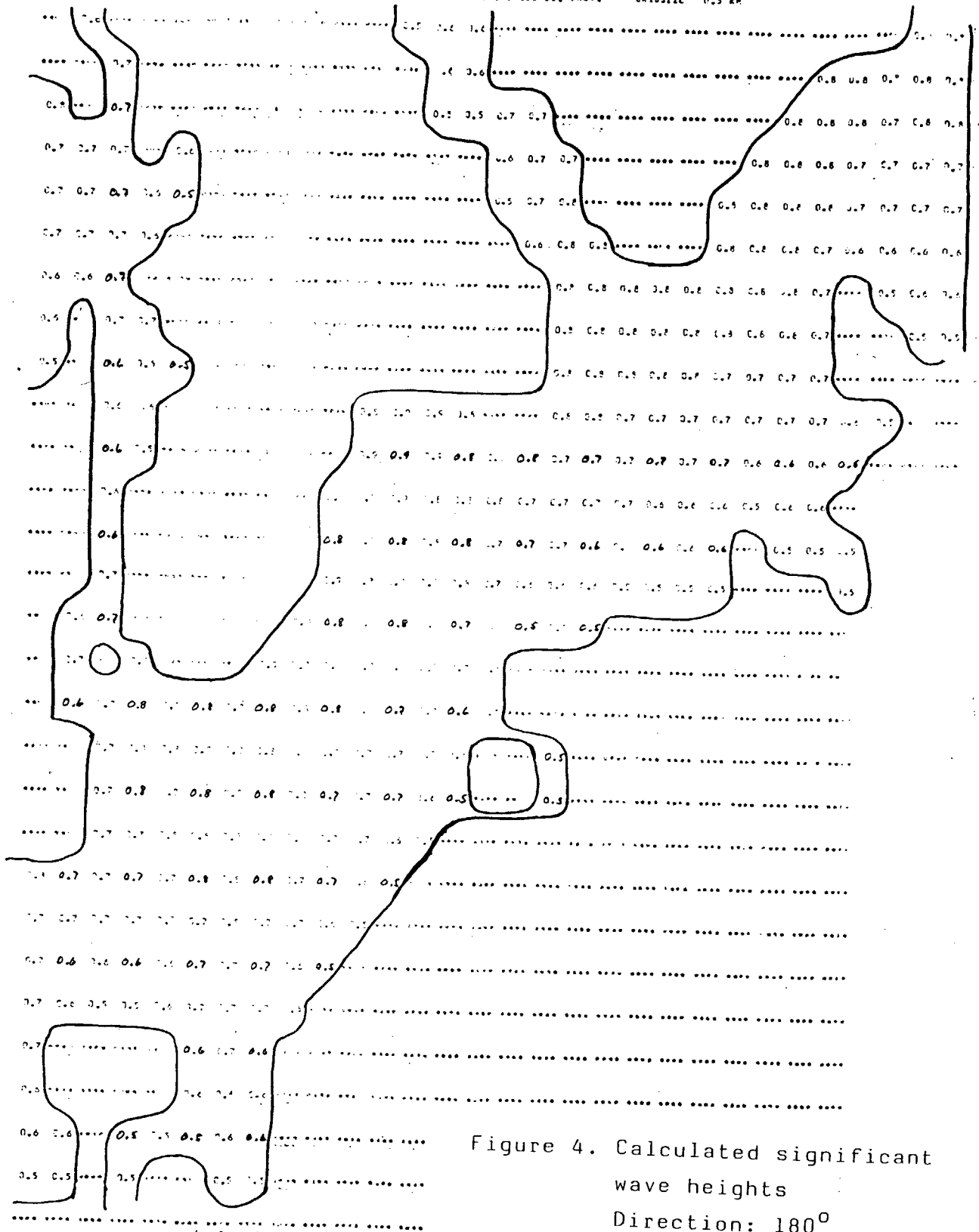


Figure 4. Calculated significant wave heights
Direction: 180°
Wind speed: 35 knots
Duration: 9 hours

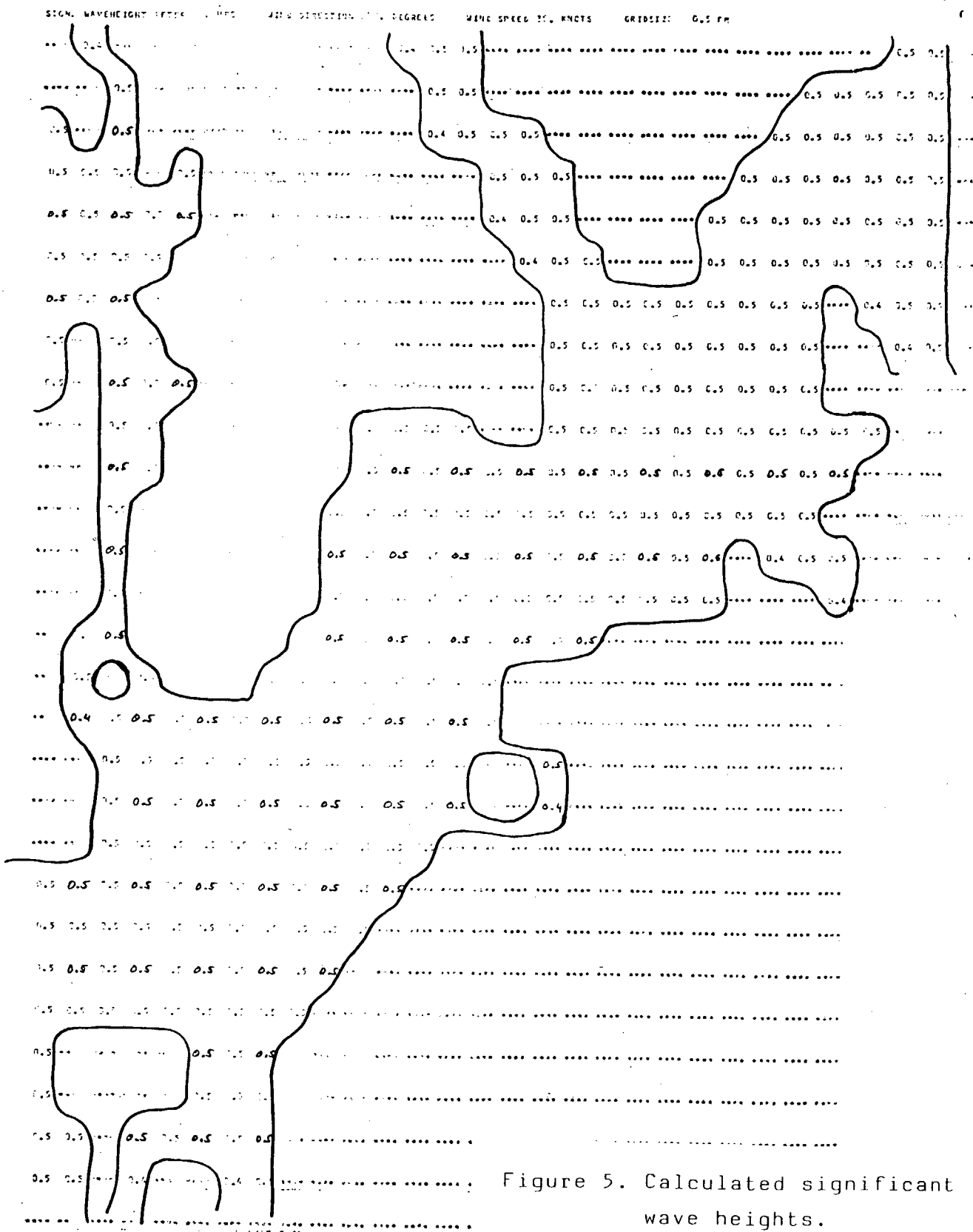


Figure 5. Calculated significant wave heights.
 Direction: 225⁰
 Wind speed: 35 knots
 Duration: 3 hours

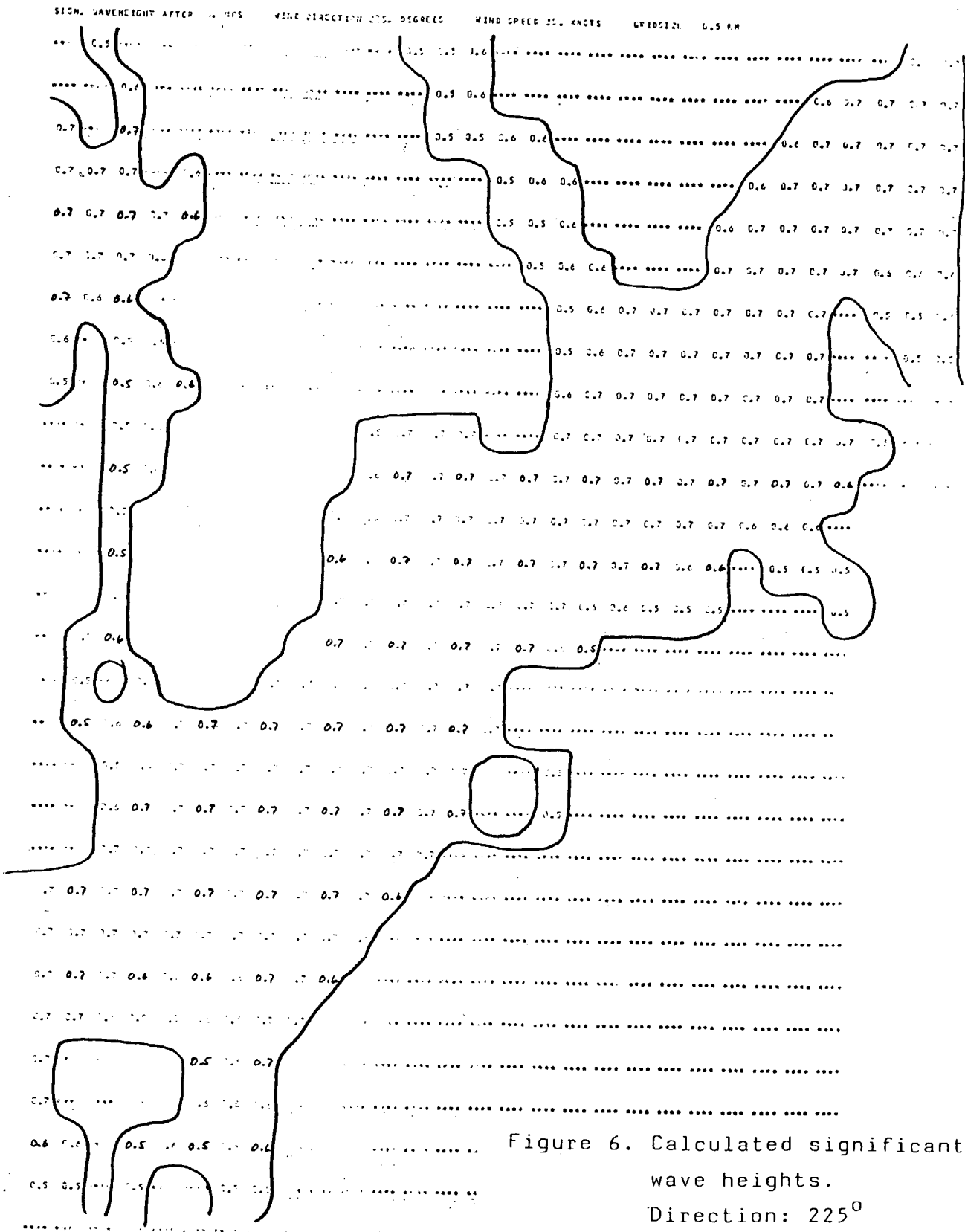


Figure 6. Calculated significant wave heights.
 Direction: 225°
 Wind speed: 35 knots
 Duration: 6 hours

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